

## 1992 JSC NEWS RELEASES

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92-038	Chief Astronaut to Retire from Navy and Leave NASA	7/01/92
92-039	STS-50 Postflight Briefings Set for July 20	7/14/92
92-040	Emergency Rescue Teams Test Preparedness in Simulation	7/15/92

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92-043	NTE: NASA Welcomes Astronaut Class of 1992	7/29/92
92-044	NTE: STS-47 Preflight Briefings Set	8/04/92
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92-046	Astronaut Sullivan to Become Chief Scientist at NOAA	8/14/92
92-047	Crew Assignments Announced for STS-58 and STS-61	8/27/92
92-048	Payload Commander Named for IML-2 Mission	9/02/92
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92-050	Note to Editors: Astronaut Mae Jamison to Speak with Chicago Youth	9/14/92
92-051	NASA Contract Awarded for New Space Shuttle Display System	9/18/92
92-052	STS-52 and MARS Observer Preflight Briefings Set	9/21/92
92-053	NTE: STS-47 Spacelab-J Postflight Crew Press Conference Set	9/25/92
92-054	Shuttle Mission STS-53 Preflight Briefings Set for Oct. 6	9/30/92
92-055	Atlantis to Make East Texas Stops En Route to California	10/14/92
92-056	Flight Control of STS-52	10/16/92
92-057	Mission Specialists Named for IML-2 Mission	10/27/92
92-058	An Historic Communications Link Set From Space to Sea	10/27/92
92-059	NASA Names Crew for STS-60 Mission with Cosmonaut	10/28/92
92-060	Payload Specialist Selected for Second Life Sciences Mission	10/29/92
92-061	NASA Awards JSC Information Systems Contract	10/30/92

92-062	Photo Opportunity with Cosmonauts	11/05/92
92-063	STS-52 Postflight Press Conference	11/09/92
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92-065	Flight Control Release of STS-53	11/25/92
92-066	Spacewalk added to Shuttle Flight, More Expected	11/25/92
92-067	Cohen Names Leestma to Top Flight Crew Operations Position	11/30/92
92-068	Soyuz as Space Station Emergency Vehicle is Focus of Meeting	11/30/92
92-069	Garn Simulator and Training Facility Dedication	12/04/92
92-070	Officials Available to Discuss ACRV Study Progress	12/09/92
92-071	STS-53 and STS-54 Space Shuttle Mission Briefings Set	12/30/92

# NASA NEWS

National Aeronautics and  
Space Administration

Lyndon B. Johnson Space Center  
Houston, Texas 77058  
AC 713 483-5111

For Release  
January 7, 1992

Barbara Schwartz  
RELEASE NO. 92-001

NTE: STS-42 PREFLIGHT BACKGROUND BRIEFINGS SET

The first flight of the International Microgravity Laboratory, IML-01, is set for Jan. 22 aboard the Space Shuttle Discovery. This flight is dedicated to research in both materials and life sciences disciplines in the microgravity environment. Over 220 scientists in 14 countries are involved in this unprecedented international effort.

A series of briefings to familiarize news media with the operations and science of the IML-01 mission will be conducted on Friday, Jan. 10, from the Johnson Space Center (JSC), Houston, and from the Marshall Space Flight Center (MSFC), Huntsville, Ala. The schedule follows:

8 a.m. CST	MISSION OVERVIEW BRIEFING  Bob Castle, Lead Flight Director (JSC) Bob McBrayer, Mission Manager (MSFC)
9:10 a.m.	LIFE SCIENCES (MSFC)  Significance of IML-01 Dr. Ronald J. White, Program Scientist  IML-01 Science Dr. Robert Snyder, Mission Scientist  Microgravity Vestibular Investigations Dr. Millard Reschke, Principal Investigator  Gravitational Plant Physiology Facility Dr. David Heathcote, Principal Investigator  Biorack Dr. Claude Brillouet, Project Scientist

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Space Physiology Experiments  
Dr. Alan Mortimer, Chief Life Sciences,  
Canadian Space Agency

10:30 a.m.

MATERIALS SCIENCES (MSFC)

Introduction

Dr. Robert Sokolowski, Program Scientist

Casting & Solidification Technology

Dr. Mary McCay, Principal Investigator

Critical Point Facility

Dr. Daniel Beysens, Principal  
Investigator

Cryostat, Protein Crystal Growth

Dr. Walter Littke, Principal  
Investigator

Organic Crystal Growth Facility

Dr. Akira Kanbayashi, Principal  
Investigator

Vapor Crystal Growth System & Mercury  
Iodide Crystal Growth

Dr. Lodewijk van den Berg, Principal  
Investigator

12 noon

LUNCH BREAK

1 p.m.

SHUTTLE STUDENT INVOLVEMENT PROGRAM (JSC)

Convection in Zero Gravity

Scott Thomas

Zero-G Capillary Rise of Liquid Through Porous  
Media Constantine Costes

All briefings will be broadcast on NASA Select television, accessed via SATCOM F2R, transponder 13, located at 72 degrees west longitude. News media attending the press conference at NASA Headquarters or field centers may ask questions from those locations.

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# NASA News

National Aeronautics and  
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Lyndon B. Johnson Space Center  
Houston, Texas 77058  
AC 713 483-5111

For Release:

Barbara Schwartz  
RELEASE NO. 92-002

January 7, 1992

## FOURTH GROUP OF PROSPECTIVE ASTRONAUTS TO ARRIVE AT JSC

The fourth and final group of prospective astronauts for this selection process will be at Johnson Space Center (JSC) the week of Jan. 12 for orientation, interviews, and medical evaluations.

Eighty-seven of more than 2200 applicants will have been interviewed during December and January for a chance to be among the final 12 to 19 who will be named as astronaut candidates next spring. Those selected will join 6 international astronaut candidates representing Canada, Japan, and the European Space Agency for training at JSC beginning later in 1992.

The 21 interviewees in the fourth group are Robert A. Barish, M.D., of Baltimore, MD; James J. Cullen, Ph.D., of Las Vegas, NV; William P. Daily (Capt., USAF) of Colorado Springs, CO; Elizabeth A. Davies of California, MD; Darrell O. Hancock (Maj., USAF) of USAF Academy, CO; Scott J. Horowitz (Capt., USAF) of Edwards AFB, CA; Rick D. Husband (Capt., USAF) of Edwards, CA; Kevin R. Kregel of JSC; Joseph A. Lanni (Capt., USAF) of Niceville, FL; Pamela A. Melroy (Capt., USAF) of Edwards AFB, CA; Kent V. Rominger (Lcdr., USN) of Poway, CA; Dennis F. Sager (Capt., USAF) of Henderson, NV; Winston E. Scott (Cdr., USN) of Yardley, PA; Eric A. Swanson of Acton, MA; Joseph R. Tanner of JSC; Ronald P. Townsend (Lt., USN) of Lexington Park, MD; Martin J. Trout (Maj., USAF) of Oro Valley, AZ; Scott D. Vangen of Kennedy Space Center, FL; James W. Wade, Ph.D., of Houston, TX; Mary E. Weber, Ph.D., of Austin, TX; and Jeffrey N. Williams (Capt., USA) of JSC.

Astronaut candidate selections are conducted on a biennial basis. The number of candidates selected depends upon the Space Shuttle flight rate, overall program requirements, and astronaut attrition.

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# NASA News

National Aeronautics and  
Space Administration

Lyndon B. Johnson Space Center  
Houston, Texas 77058  
AC 713 483-5111

For Release:

January 9, 1992

Jeffrey Carr  
Release No. 92-003

## FLIGHT CONTROL OF STS-42

Flight control for STS-42, the fourteenth flight of Discovery, will follow the procedures and traditions common to U.S. manned space flights since 1965, when the Mission Control Center was first used.

Responsibility for conduct of flight operations will revert to the Mission Control Center (MCC) in Houston once Discovery's two solid rocket boosters ignite. Mission support in the MCC will begin five hours prior to launch and continue through landing.

The primary objective of mission STS-42 is to conduct continuing microgravity research in a variety of science disciplines which make up the International Microgravity Laboratory mission, IML-01.

After being cleared for orbital operations, the crew will begin activation of the spacelab module subsystems. Once the subsystems are activated, experiment activation and conduct of payload operations throughout the mission will be managed by payload controllers at the Payload Operations Control Center (POCC), located at the Marshall Space Flight Center in Huntsville, Alabama.

Flight operations will be conducted from Flight Control Room One (FCR-1) on the second floor of the MCC located in Bldg. 30 at the Johnson Space Center. The teams of flight controllers will alternate shifts in the control center and in nearby analysis and support facilities. The handover between each team takes about an hour and allows each flight controller to brief his or her replacement on developments during the previous two shifts.

The four flight control teams for this mission will be referred to as the Ascent/Entry, Orbit 1, Orbit 2, and Orbit 3 teams. The ascent and entry phases will be conducted by flight director N. Wayne Hale, Jr. The Orbit 1 team will also be headed by Hale. The Orbit 2 team, will be directed by lead flight director Robert E. Castle, Jr. The Orbit 3 team will be led by Charles W. Shaw.

## MCC POSITIONS AND CALL SIGNS FOR STS-42

The flight control positions in the MCC, and their responsibilities, are:

### **Flight Director (FLIGHT)**

Has overall responsibility for the conduct of the mission.

### **Spacecraft Communicator (CAPCOM)**

By tradition an astronaut; responsible for all voice contact with the flight crew.

### **Flight Activities Officer (FAO)**

Responsible for procedures and crew timelines; provides expertise on flight documentation and checklists; prepares messages and maintains all teleprinter and/or Text and Graphics System traffic to the vehicle.

### **Integrated Communications Officer (INCO)**

Responsible for all Orbiter data, voice and video communications systems; monitors the telemetry link between the vehicle and the ground; oversees the uplink command and control processes.

### **Flight Dynamics Officer (FDO)**

Responsible for monitoring vehicle performance during the powered flight phase and assessing abort modes; calculating orbital maneuvers and resulting trajectories; and monitoring vehicle flight profile and energy levels during reentry.

### **Trajectory Officer (TRAJECTORY)**

Also known as "TRAJ," this operator aids the FDO during dynamic flight phases and is responsible for maintaining the trajectory processors in the MCC and for trajectory inputs made to the Mission Operations Computer.

### **Guidance, Navigation & Control Systems Engineer (GNC)**

Responsible for all inertial navigational systems hardware such as star trackers, radar altimeters and the inertial measurement units; monitors radio navigation and digital autopilot hardware systems.

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### **Guidance & Procedures Officer (GPO)**

Responsible for the onboard navigation software and for maintenance of the Orbiter's navigation state, known as the state vector. Also responsible for monitoring crew vehicle control during ascent, entry, or rendezvous.

### **Rendezvous Guidance and Procedures Officer (RENDEZVOUS)**

The RENDEZVOUS GPO is specialist who monitors onboard navigation of the Orbiter during rendezvous and proximity operations. The UARS deploy maneuver involves an active separation, using rendezvous radar to verify separation rates, requiring the support of this specialist

### **Environmental Engineer & Consumables Manager (EECOM)**

Responsible for all life support systems, cabin pressure, thermal control and supply and waste water management; manages consumables such as oxygen and hydrogen.

### **Electrical Generation and Illumination Officer (EGIL)**

Responsible for power management, fuel cell operation, vehicle lighting and the master caution and warning system.

### **Payloads Officer (PAYLOADS)**

Coordinates all payload activities; serves as principal interface with remote payload operations facilities.

### **Data Processing Systems Engineer (DPS)**

Responsible for all onboard mass memory and data processing hardware; monitors primary and backup flight software systems; manages operating routines and multi-computer configurations.

### **Propulsion Engineer (PROP)**

Manages the reaction control and orbital maneuvering thrusters during all phases of flight; monitors fuel usage and storage tank status; calculates optimal sequences for thruster firings.

### **Booster Systems Engineer (BOOSTER)**

Monitors main engine and solid rocket booster performance during ascent phase.

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**Ground Controller (GC)**

Coordinates operation of ground stations and other elements of worldwide space tracking and data network; responsible for MCC computer support and displays.

**Maintenance, Mechanical, Arm & Crew Systems (MMACS)**

Formerly known as RMU; responsible for remote manipulator system; monitors auxiliary power units and hydraulic systems; manages payload bay and vent door operations.

**Extravehicular Activities (EVA)**

A specialist responsible for monitoring and coordinating preparations for and execution of space walks. Responsibilities include monitoring suit and EVA hardware performance.

**Payload Data & Retrieval System (PDRS)**

A specialist responsible for monitoring and coordinating the operation of the remote manipulator system.

**Flight Surgeon (SURGEON)**

Monitors health of flight crew; provides procedures and guidance on all health-related matters.

**Public Affairs Officer (PAO)**

Provides real-time explanation of mission events during all phases of flight.

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STS-42 FLIGHT CONTROL TEAM STAFFING

<u>Position</u>	<u>Ascent/Entry</u>	<u>Orbit 1</u>	<u>Orbit 2/Lead</u>	<u>Orbit 3</u>
FLIGHT	Wayne Hale	Wayne Hale	Bob Castle	Chuck Shaw
CAPCOM	Bob Cabana (A) John Casper (E)	Peter Wisoff Bill Shepherd	Rhea Seddon	Jan Davis Sid Gutierrez
FAO	Tracy Calhoun	Tracy Calhoun	Debbie Jackson	Ann Bowersox
INCO	Harry Black	Harry Black	Roberto Moolchan	Richard LaBrode
FDO	Matt Abbott (A) Ed Gonzalez (E)	Phil Burley	Steve Stich	Carson Sparks
TRAJ	Brian Perry (A) Keith Fletcher (E)	Mark Riggio	Roger Balettie	Bill Tracey
GNC	David Miller	Kenneth Bain	Heather Mitchell	Stanley Schaefer
GPO	Jeff Bertsch (A) Dennis Bentley (E)			
EECOM	Pete Cerna	Pete Cerna	Dan Molina	Linda Perrine
EGIL	Charles Dingell	Charles Dingell	Mark Fugitt	Robert Armstrong
PAYLOADS	Sharon Conover	Sharon Conover	Debbie Pawkett	Pete Hasbrook

(more)

STS-42 FLIGHT CONTROL TEAM STAFFING  
(Continued)

<u>Position</u>	<u>Ascent/Entry</u>	<u>Orbit 1</u>	<u>Orbit 2</u>	<u>Orbit 3</u>
DPS	Terry Keeler	Terry Keeler	Burt Jackson	Gary Sham
PROP	Matthew Barry	Matthew Barry	Lonnie Schmitt	Thomas Lazo
BOOSTER	Terri Stowe Terri Stowe	/////	/////	Thomas Kwiatkowski
GC	Chuck Capps Lynn Vernon	John Snyder Dennis Williams	Henry Allen Bob Reynolds	Larry Foy Johnnie Brothers
MMACS	Bill Anderson	Bill Anderson	Karl Pohl	Alan Bachik
SURGEON	Denise Baisden	Brad Beck	Larry Pepper	Denise Baisden
PAO	Jeff Carr (A) Billie Deason (E)	Jeff Carr	Kari Fluegel	James Hartsfield

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(A) = Ascent; (E) = Entry  
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# NASA NEWS

National Aeronautics and  
Space Administration

Lyndon B. Johnson Space Center  
Houston, Texas 77058  
AC 713 483-5111

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For Release

Barbara Schwartz  
RELEASE NO. 92-004

January 31, 1992

STS-42 POSTFLIGHT BRIEFING TO BE HELD FEB. 11

The astronaut crew for Space Shuttle mission STS-42, the International Microgravity Laboratory, will narrate film and slides from their flight and answer questions Tues., Feb. 11, at 1:30 p.m. The press conference will originate from the Johnson Space Center, Houston, Texas, building 2, room 135.

The press conference will be carried on NASA Select television with two-way audio for questions and answers from NASA Headquarters and other centers. NASA Select programming is carried on Satcom F2R, transponder 13, located at 72 degrees West longitude.

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# NASA News

National Aeronautics and  
Space Administration

Lyndon B. Johnson Space Center  
Houston, Texas 77058  
AC 713 483-5111

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For Release:

James Hartsfield  
Release No. 92-005

February 4, 1992

## SHUTTLE COLUMBIA TO STOP OVERNIGHT IN HOUSTON

NASA's first Space Shuttle orbiter, Columbia, fresh from a 32-million mile check-up and upgrade, is scheduled to stop overnight at Houston's Ellington Field Friday, weather permitting.

The public will be allowed in the Ellington gates at NASA Hangar 990 to view the spacecraft from the time it arrives piggyback atop the Shuttle Carrier Aircraft (SCA) Boeing 747, planned for early afternoon, until 10 p.m.

Columbia is scheduled to depart Palmdale, Calif., early Friday to begin its trip back to Florida's Kennedy Space Center where it will be prepared for its 12th space flight, scheduled to launch in June. The oldest shuttle has been at Rockwell's Palmdale facilities since August 1991, receiving an intensive structural inspection and several significant system modifications.

Columbia's airframe received a thorough inspection using visual and X-ray techniques. The inspections revealed no surprises in the way the spacecraft is aging and found no unanticipated damage.

The upgrades to Columbia include outfitting the spacecraft to spend up to 16 days in orbit by providing the capability to carry extra hydrogen and oxygen tanks in the cargo bay for use in generating electricity and water; installing improved equipment for handling waste onboard and for scrubbing the air of exhaled carbon dioxide; and providing extra oxygen and nitrogen for breathing air. Columbia's June flight, shuttle mission STS-50 with the United States Microgravity Lab aboard, is planned to be 13 days long, the longest shuttle flight to date.

Other advancements to Columbia include installation of new flight control computers, thermal tile upgrades to reduce preparations required between flights, improvements to the nosewheel steering and brake controls, installation of a drag chute to slow and stabilize the spacecraft on landing, and

installation of improved auxiliary power units used to power the hydraulics onboard. More than 50 modifications have been made to update the original orbiter.

Both Atlantis and Discovery will be taken out of service for several months later this year for similiar upgrades and inspections, but Columbia is the only shuttle currently planned to receive the capability for longer flights.

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NOTE TO EDITORS: News media interested in interviewing members of Columbia's next crew, members of the SCA crew or engineers who have overseen the inspections and modifications should contact the JSC Public Affairs Office before Friday.

# NASA News

National Aeronautics and  
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Lyndon B. Johnson Space Center  
Houston, Texas 77058  
AC 713 483-5111

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For Release:

Jeffrey Carr  
RELEASE NO. 92-006

February 6, 1992

NTE: JSC SPACE STATION FACILITIES TO BE DEDICATED

A ceremony to dedicate two key facilities at the Johnson Space Center, Houston - the Space Station Control Center and the Space Station Training Facility - has been set for Thursday, Feb. 13, at 10 a.m. CST.

Speakers for the event will include JSC Center Director Aaron Cohen and Mission Operations Director Eugene Kranz, who will be available for interviews following the ceremony.

A press tour of the facilities at 8:30 a.m. CST will precede the ceremony.

News media interested in attending the events should contact the JSC newsroom (713-483-5111) as soon as possible. Participants should plan to arrive at JSC, Building 2, for badging and information no later than 8:15 a.m.

The dedication ceremony will be carried on NASA Select television (Satcom F2R, transponder 13, 72 degrees west longitude).

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# NASA News

National Aeronautics and  
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Lyndon B. Johnson Space Center  
Houston, Texas 77058  
AC 713 483-5111

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For Release

Barbara Schwartz  
RELEASE NO. 92-007

February 10, 1992

## SPACE SHUTTLE MISSION STS-45 BRIEFINGS SET

Space Shuttle Mission STS-45 will be the first flight of the Atmospheric Laboratory for Applications and Science (ATLAS-1). The ATLAS-1 will measure long-term variability in the total energy radiated by the sun and measure the Earth's middle atmospheric constituents over one 11-year solar cycle.

Prelaunch briefings will be held at the Johnson Space Center, Houston, on Friday, Feb. 14, beginning with a mission overview by Lead Flight Director Rob Kelso at 9 a.m. CST. The Shuttle Amateur Radio Experiment briefing will be at 10 a.m. The astronaut crew briefing is scheduled for 1 p.m.

The astronauts will be available for round-robin interviews following the press conference. News media representatives wishing to participate in the crew interviews should notify the JSC newsroom by 12 p.m. CST, Feb. 13, 1992.

Science team briefings will be held at a date to be determined.

The briefings only will be carried live on NASA Select television with two-way audio for questions from NASA Headquarters and other centers. NASA Select programming is carried on Satcom F2R, transponder 13, located at 72 degrees west longitude.

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# NASA News

National Aeronautics and  
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Lyndon B. Johnson Space Center  
Houston, Texas 77058  
AC 713 483-5111

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For Release

Release No. 92-008

February 20, 1992

## Aaron Cohen Statement

I am honored today to have been asked by the Administrator to serve as Acting Deputy Administrator of the National Aeronautics and Space Administration.

Over the last 30 years, it has been my privilege to have participated in our nation's most spectacular successes in manned space flight. It has also been a very humbling experience to have been involved in its most tragic failures. Through good times and bad, there have been valuable lessons learned. These lessons have helped to prepare me for the job at hand.

Officially I remain Director of the Johnson Space Center and it is my intention to return to that post as soon as possible. In my absence, Paul Weitz will be acting Center Director, and he does so with my complete confidence.

I did not seek this task, but having been asked to do it, I accept the challenge with enthusiasm and commitment.

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AC 713 483-5111

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For Release:

Barbara Schwartz  
(Phone: 713/483-5111)

February 21, 1992

RELEASE: 92-009

## CREW ASSIGNMENTS ANNOUNCED FOR FUTURE SHUTTLE MISSIONS

Steven R. Nagel (Col., USAF) will command the Spacelab-D2 mission, STS-55, scheduled for an early-1993 launch. This is a cooperative mission with the German Space Agency to conduct research in robotics, materials processing and life sciences. Nagel is a veteran of three previous Space Shuttle missions, as a mission specialist on STS-51G in June 1985, as pilot on STS-61A in October 1985 and as commander on STS-37 in April 1991.

Pilot on the STS-55 mission will be Terrence T. "Tom" Henricks (Col., USAF), who was pilot on STS-44 in November 1991. Charles J. Precourt (Maj., USAF), astronaut class of 1990, is assigned as a mission specialist. This is his first flight assignment.

Previously assigned crew members are payload commander Jerry L. Ross (Col., USAF), mission specialist Bernard A. Harris, Jr., M.D., and German payload specialists Hans Schlegel and Ulrich Walter.

G. David Low, who served as a mission specialist on two Shuttle flights, STS-32 in January 1990 and STS-43 in August 1991, will be payload commander on STS-57, which will carry the commercial middeck augmentation module called SPACEHAB and retrieve the European Retrievable Carrier. STS-57 is scheduled for launch in mid-1993. Janice E. Voss, Ph.D., is assigned to this flight as a mission specialist. This is the first flight assignment for Voss, who is a member of the 1990 astronaut class.

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Thomas D. Jones, Ph.D., will be a mission specialist on the Space Radar Laboratory-01 flight, STS-60, in late 1993. This is the first flight for Jones, also a member of the 1990 astronaut class. Linda M. Godwin, Ph.D., was assigned in August 1991 as mission payload commander. SRL-01 will acquire radar images of the Earth's surface for making maps and interpreting geological features and resource studies.

Additional crew members on STS-57 and STS-60 will be named at a later date.

- end -

# NASA NEWS

National Aeronautics and  
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Lyndon B. Johnson Space Center  
Houston, Texas 77058  
AC 713 483-5111

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For Release

Jeffrey Carr  
Release No. 92-10

March 4, 1992

## FLIGHT CONTROL OF STS-45

Flight control for STS-45, the eleventh flight of Atlantis will follow the procedures and traditions common to U.S. manned space flights since 1965, when the Mission Control Center was first used.

Responsibility for conduct of flight operations will revert to the Mission Control Center (MCC) in Houston once Discovery's two solid rocket boosters ignite. Mission support in the MCC will begin five hours prior to launch and continue through landing.

The primary objective of mission STS-45 is to conduct research in the relationship between the Earth's atmosphere and Sun, and its effect on the climate., in support of the ATLAS-1 mission. The ATLAS-1 mission is a multidiscipline, international effort comprising four broad areas of science: Atmospheric Physics, Solar Physics, Space Plasma Physics, and Astronomy.

After being cleared for orbital operations, the crew will begin activation of the spacelab pallet subsystems. Once the subsystems are activated, experiment activation and conduct of payload operations throughout the mission will be managed by payload controllers at the Payload Operations Control Center (POCC), located at the Marshall Space Flight Center in Huntsville, Alabama.

Flight operations will be conducted from Flight Control Room One (FCR-1) on the second floor of the MCC located in Bldg. 30 at the Johnson Space Center. The teams of flight controllers will alternate shifts in the control center and in nearby analysis and support facilities. The handover between each team takes about an hour and allows each flight controller to brief his or her replacement on developments during the previous two shifts.

The four flight control teams for this mission will be referred to as the Ascent/Entry, Orbit 1, Orbit 2, and Orbit 3 teams. The ascent and entry phases will be conducted by flight director Jeffrey W. Bantle. The Orbit 1 team will be headed by Robert E. Castle, Jr.. The Orbit 2 team, will be directed by lead flight director Robert M. Kelso. The Orbit 3 team will be led by Linda Ham.

## MCC POSITIONS AND CALL SIGNS FOR STS-45

The flight control positions in the MCC, and their responsibilities, are:

### Flight Director (FLIGHT)

Has overall responsibility for the conduct of the mission.

### Spacecraft Communicator (CAPCOM)

By tradition an astronaut; responsible for all voice contact with the flight crew.

### Flight Activities Officer (FAO)

Responsible for procedures and crew timelines; provides expertise on flight documentation and checklists; prepares messages and maintains all teleprinter and/or Text and Graphics System traffic to the vehicle.

### Integrated Communications Officer (INCO)

Responsible for all Orbiter data, voice and video communications systems; monitors the telemetry link between the vehicle and the ground; oversees the uplink command and control processes.

### Flight Dynamics Officer (FDO)

Responsible for monitoring vehicle performance during the powered flight phase and assessing abort modes; calculating orbital maneuvers and resulting trajectories; and monitoring vehicle flight profile and energy levels during reentry.

### Trajectory Officer (TRAJECTORY)

Also known as "TRAJ," this operator aids the FDO during dynamic flight phases and is responsible for maintaining the trajectory processors in the MCC and for trajectory inputs made to the Mission Operations Computer.

### Guidance, Navigation & Control Systems Engineer (GNC)

Responsible for all inertial navigational systems hardware such as star trackers, radar altimeters and the inertial measurement units; monitors radio navigation and digital autopilot hardware systems.

#### Guidance & Procedures Officer (GPO)

Responsible for the onboard navigation software and for maintenance of the Orbiter's navigation state, known as the state vector. Also responsible for monitoring crew vehicle control during ascent, entry, or rendezvous.

#### Rendezvous Guidance and Procedures Officer (RENDEZVOUS)

The RENDEZVOUS GPO is specialist who monitors onboard navigation of the Orbiter during rendezvous and proximity operations. The UARS deploy maneuver involves an active separation, using rendezvous radar to verify separation rates, requiring the support of this specialist.

#### Environmental Engineer & Consumables Manager (EECOM)

Responsible for all life support systems, cabin pressure, thermal control and supply and waste water management; manages consumables such as oxygen and hydrogen.

#### Electrical Generation and Illumination Officer (EGIL)

Responsible for power management, fuel cell operation, vehicle lighting and the master caution and warning system.

#### Payloads Officer (PAYLOADS)

Coordinates all payload activities; serves as principal interface with remote payload operations facilities.

#### Data Processing Systems Engineer (DPS)

Responsible for all onboard mass memory and data processing hardware; monitors primary and backup flight software systems; manages operating routines and multi-computer configurations.

#### Propulsion Engineer (PROP)

Manages the reaction control and orbital maneuvering thrusters during all phases of flight; monitors fuel usage and storage tank status; calculates optimal sequences for thruster firings.

#### Booster Systems Engineer (BOOSTER)

Monitors main engine and solid rocket booster performance during ascent phase.

#### Ground Controller (GC)

Coordinates operation of ground stations and other elements of worldwide space tracking and data network; responsible for MCC computer support and displays.

#### Maintenance, Mechanical, Arm & Crew Systems (MMACS)

Formerly known as RMU; responsible for remote manipulator system; monitors auxilliary power units and hydraulic systems; manages payload bay and vent door operations.

#### Extravehicular Activities (EVA)

A specialist responsible for monitoring and coordinating preparations for and execution of space walks. Responsibilities include monitoring suit and EVA hardware performance.

#### Payload Data & Retrieval System (PDRS)

A specialist responsible for monitoring and coordinating the operation of the remote manipulator system.

#### Flight Surgeon (SURGEON)

Monitors health of flight crew; provides procedures and guidance on all health-related matters.

#### Public Affairs Officer (PAO)

Provides real-time explanation of mission events during all phases of flight.

## STS-45 FLIGHT CONTROL TEAM STAFFING

<u>POSITION</u>	<u>ASCENT/ENTRY</u>	<u>ORBIT 1</u>	<u>ORBIT 2</u>	<u>ORBIT 3</u>
FLIGHT	Jeff Bantle	Bob Castle	Rob Kelso	Linda Ham
CAPCOM	John Casper (A) Sid Gutierrez (E)	Sid Gutierrez Carl Walz	Rhea Seddon Peter Wisoff	Jim Halsell Sam Gemar
FAO	Michael Hurt	Michael Hurt	Fisher Reynolds	Greg Smith
INCO	Chris Counts	Chris Counts	Jay Conner	Roberto Moolchan
FDO	Matt Abbott (A) Keith Fletcher (E)	Bill Tracy	Dick Theis	Dan Adamo
TRAJ	Bruce Hilty (A) Ed Gonzalez (E)	Don Pearson	Lisa Shore	Roger Simpson
GNC	Stanley Schaefer	Stanly Schaefer	Bradley Schoenbauer	Phillip Perkins
EECOM	Leonard Riche	Leonard Riche	Linda Perrine	Dave Herbek
EGIL	Robert Armstrong	Robert Armstrong	Brian Anderson	Mark Fugitt

PAYLOADS	Roger Galpin	Roger Galpin	Debbie Bulgher	Jean Costlow
DPS	David Tee	David Tee	Burt Jackson	Gloria Araiza
PROP	Tony Ceccacci	Tony Ceccacci	Bill Powers	Matt Barry
BOOSTER	Mark Jenkins (A) Michael Dingler (E)			
GC	Larry Foy Lynn Vernon	Chuck Capps Melissa Blizzard	John Snyder Joe Aquino	Terry Quick Bob Reynolds
MMACS	Robert Doremus	Robert Doremus	Ladessa Hicks	William Anderson
SURGEON	Larry Pepper	Roger Billica	Denise Baisden	Richard Jennings
PAO	James Hartsfield (A) Jeffrey Carr (E)	James Hartsfield	Kyle Herring	Brian Welch

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# NASA News

National Aeronautics and  
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Lyndon B. Johnson Space Center  
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For Release

Kari Fluegel  
RELEASE: 92-11

March 6, 1992

## BIOREACTOR TEAM EARNS NASA INVENTOR OF THE YEAR HONORS

Not many would expect an agency known for Space Shuttle launches and Moon expeditions to make extraordinary contributions to medical research, but a biotechnology team in the Medical Sciences Division at NASA's Johnson Space Center (JSC) has done so, earning the honor of NASA Inventor of the Year.

JSC's David Wolf, Ray Schwarz and Tinh Trinh recently were selected by NASA's General Counsel Office for their development and design of a new class of horizontally rotating tissue culture systems -- also known as the rotating wall bioreactor -- that in some ways simulate microgravity.

Bioreactors are cell maintenance devices used for research in growth and culturing cells or tissues. Investigators around the country already have evaluated the JSC bioreactor as a tool for pioneering research in lung tissue, skin growth, intestinal disease, cartilage growth, colon cancer, brain tumor growth and therapeutics. "This is a good example of when NASA research benefits man on Earth," Wolf said.

The bioreactor cultures the cells in a horizontal cylinder that slowly rotates, resulting in lower stress environments than most devices. It is believed that in space the rotating wall vessel would offer even lower shears which might provide more spectacular results.

Prior to the development of JSC's bioreactor, three-dimensional tissue growth could not be accomplished. Traditional culture devices allow only two-dimensional growth because cells become damaged by the suspension vessel or do not bond together to organize themselves into actual tissues.

Research with the rotating wall vessel over the past 2 years has enabled development of cell cultures that behave more like three-dimensional tissues behave in the human body. For this to be true, it is necessary that cells recreate the correct three-dimensional relationships in the bioreactor as they do in the parent tissue.

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Wolf, Schwarz and Trinh started work on the rotating wall bioreactor in 1986 while the Shuttle fleet was grounded. Tissue researchers, then unable to have access to space, needed a means to simulate microgravity on Earth, and a pooling of knowledge in biology with gravitational physics, fluid dynamics, rotational systems and life support systems was the answer to the question, Wolf said.

It was known that plants developed similarly when exposed to either horizontal rotation or actual microgravity. Coincidentally, Trinh tried rotating a syringe with microcarrier beads in an electric drill. The drill's spinning action suspended the beads in controlled positions, reducing greatly the stresses experienced by the cells.

The team found that just moving the medium inside the vessel was not enough. The boundary layer of the medium next to a non-rotating wall added enough sheer stress to damage the culture. "Rotating the wall takes away the fluid velocity gradients near the vessel walls," Wolf said. "That's the big difference. That's why it works." The bioreactor also needed to compensate for the orientation changes experienced by a Shuttle middeck locker during ascent, orbit and entry.

Eventually several classes of vessels -- some batch and some with continuous media profusion -- were constructed including key components of a future Space Bioreactor.

"The Space and Life Sciences Directorate Medical Sciences Division's Biomedical Research and Operations Branch was an ideal place to conduct research. They provided all the support necessary to make it happen," Wolf said. "A mix of expertise was required including biology, mechanics and computers to implement the novel culture system concepts. A space center provides such multidisciplinary talent. That exactly describes the talented biotechnology team at JSC."

Wolf said that the outstanding results seen in the Earth-based research is predicted to be enhanced by "orders of magnitude" when the Space Bioreactor vessel is operated in microgravity. Wolf, now an astronaut scheduled to fly on STS-58

next year, was the manager of the Biotechnology Laboratory when the bioreactor was developed. Trinh is a technician with Krug International, and Schwarz is Chief Engineer of Synthecon Inc., the company with the exclusive license to the bioreactor technology.

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This year's honor will be shared with William G. Simpson, Max H. Sharpe and William E. Hill of Marshall Space Flight Center for "Sprayable Lightweight Ablative Coating," used on the solid rocket boosters for layering not possible with the previously used material.

Both teams will be honored at NASA Headquarters this month. Wolf, Schwarz and Trinh also are the agency's nominees for the National Inventor of the Year competition conducted by the National Intellectual Property Owners Association and the U.S. Patent and Trademark Office.

"I was thrilled not just for the team but that NASA recognized the technology as important and relevant to further space research," Wolf said. The bioreactor work was sponsored by the Office of Space Science and Applications Microgravity Science and Applications Division.

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# NASA News

National Aeronautics and  
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For Release:

Kari L. Fluegel  
Release No. 92-012

March 9, 1992

## SCIENTISTS GATHER FOR LUNAR/PLANETARY SCIENCE CONFERENCE

Scientists from around the globe will gather in Houston to discuss research covering the universe at the 23rd Annual Lunar and Planetary Science Conference, March 16-20, 1992, at the Johnson Space Center (JSC).

More than 700 researchers will converge at JSC's Gilruth Center for 5 days of presentations on a variety of subjects with much of the focus on Venus and findings from NASA's Magellan probe.

Magellan, deployed from the Space Shuttle Atlantis in May 1989, has mapped about 97 percent of the Venusian surface with its remote sensing cameras. The subsequent scientific findings have been centerpieces of discussion for the past two science conferences. An overview of the Magellan program called "Magellan at Venus: The Global Perspective Emerges" will start the conference on March 16 at 9:30 a.m. EST. Other papers focusing on Venus will be presented throughout the event.

The public is invited to a special discussion on Magellan results and a global view of planetary cratering on March 16 at 9 p.m. in the Olin E. Teague Auditorium, Bldg. 2 at JSC. Participants will be Ellen Stofan, Deputy Project Scientist for the Magellan Program at Jet Propulsion Laboratory, Pasadena, Calif., and Eugene Shoemaker of the U.S. Geological Survey. Hosts are Dr. Michael D. Griffin, NASA's Associate Administrator For Exploration, and Wes Huntress, Director Of The Solar System Exploration Division in NASA 's Office of Space Science and Applications.

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Other conference presentations are:

o March 16, 9:30 a.m. -- Meteorite Parent Bodies; Mare Basalts, KREEP and Copernican Ejecta. 2:30 p.m. -- Venus Geophysics; Assorted Achondrites; Origin and Evolution of Planetary Systems.

o March 17, 9:30 a.m. -- Venus: Tectonism and Volcanic Associations; Reduced Meteorites; Evolution of the Lunar Crust and Mantle; Outer Solar Systems/Remote Sensing: Laboratory. 2:15 p.m. -- Venus Volcanism. 2:30 p.m. -- Chondrules; Impact Cratering: Theory and Experimentation. 8 p.m. -- Poster Session at the Lunar and Planetary Institute.

o March 18, 9:30 a.m. -- Dynamics of Impacts and Resurfacing on Venus; Nebular Processes and CAIs; A Field Trip to the Moon; Martian Spectral and Laboratory Data. 2:30 p.m. -- Tectonism and Volcanism: Moon and Mars; Educational Outreach and Career Opportunities; Antarctic Micrometeorites and LDEF; Solar Wind and Cosmic Ray Irradiation.

o March 19, 9:30 a.m. -- Mars Surface and Atmosphere Through Time: Atmosphere and Surface -- Surface Properties and Processes; Cosmic Dust and Comets; Planetary Geochemistry. 2:30 p.m. -- Mars Surface and Atmosphere Through Time: Atmosphere and Surface -- Atmosphere Interactions; Stardust; Terrestrial Impacts and the KT Boundary. 8p.m. -- Poster Session at the Lunar and Planetary Institute.

o March 20, 9:30 a.m. -- Offerings from the Moon; Acapulcoites and Stony-Iron Meteorites, Meteorite Organics; Galileo: Gaspra Encounter/Asteroids.

All sessions are at the Gilruth Center except when otherwise noted. The conference is co-sponsored by The Lunar And Planetary Institute and JSC.

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# NASA NEWS

National Aeronautics and  
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**Lyndon B. Johnson Space Center**  
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For Release:

March 11, 1992

Kyle Herring

RELEASE NO. 92-013

NOTE TO EDITORS: Buoyant Overdesigned ACRV Testbed (BOAT)  
to be Christened at JSC

The new Buoyant Overdesigned ACRV Testbed (BOAT) test article will be christened Thursday, March 12, at 12 noon CST in Bldg. 9NW at the Johnson Space Center. There will be a photo opportunity at the christening ceremony.

Engineers and technicians from the JSC Assured Crew Return Vehicle (ACRV) Project Office, Systems Engineering Division, Navigation Control and Aeronautics Division, Structures and Mechanics Division, Man-Systems Division, Medical Sciences Division, and Technical Services Division designed and built the test article. Representatives from each group will be available for brief interviews.

The ACRV is a rescue system for Space Station Freedom. The full-scale weight-representative test article will undergo three phases of egress and flotation testing over the next two months. Phase 1 begins immediately and consists of dry-ground evaluations of personnel validating egress procedures. Phase 2 will be divided into unmanned and manned testing in JSC's Weightless Environment Training Facility during late March and early April. The final test phase is planned for late April and May at the Offshore Technology Research Center at Texas A&M University and includes open-water crew rescue simulations under a variety of sea-state conditions.

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# NASA NEWS

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For Release:

Barbara Schwartz  
RELEASE NO. 92-014

March 12, 1992

## ASTRONAUT VANCE BRAND JOINS AERO-SPACE PLANE PROGRAM

Veteran astronaut Vance Brand, commander of three Space Shuttle missions, has accepted a new position as Director of Plans for the X-30 National Aero-Space Plane (NASP) Joint Program Office at Wright-Patterson Air Force Base, Dayton, Ohio, effective immediately.

Brand will develop program plans and objectives to meet the national goals proposed for the National Aero-Space Plane effort and will assess the program to make sure individual technologies are fully integrated into the X-30. The X-30 is a flight research vehicle that will take off horizontally, fly into orbit, using airbreathing engines as its primary propulsion, then return through the atmosphere to land on a runway.

During his 25-year tenure at the Johnson Space Center, Houston, Brand logged 746 hours in space on four flights including the Apollo-Soyuz mission in July 1975 and three Shuttle missions - STS-5 in November 1982, STS-41B in February 1984 and STS-35 in December 1990.

Selected as an astronaut in April 1966, Brand has applied his engineering expertise to numerous ground and flight test projects. In the Astronaut Office, he has held the positions of Chief of the Operations Development Branch and Chief of the Safety Branch. He also served as Assistant Project Manager for Integration and Assembly of the Space Station.

Brand has received many awards, including the Federation Aeronautique Internationale Yuri Gagarin Gold Medal (1976) and De La Vaulx Medal (1983), the AIAA Special Residential Citation (1977), the AAS Flight Achievement Award for 1976 (1977) and two NASA Space Flight Medals (1983 and 1984).

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"I thoroughly enjoyed my 25 years at Johnson Space Center and the great experience of working on the programs from Apollo through Space Shuttle. I appreciated working with the calibre of people at JSC and have many friends here. Unfortunately, my family and I have to leave the area to start my new assignment. However, I am looking forward to the challenge of working on the Aero-Space Plane with its advanced technology and single stage-to-orbit objective."

Flight Crew Operations Director Donald R. Puddy said, "Although Vance will be missed at JSC after a long and successful career, I'm glad he will continue working within the NASA family. He will have an opportunity to apply his multi-program engineering background and space flight experience to this exciting new project. We wish him success in this new technologically challenging endeavor."

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# NASA News

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For Release

Kari Fluegel  
RELEASE NO: 92-15

March 14, 1992

## METEORITES' WATER PROVIDES CLUE TO RED PLANET'S PAST

A single drop of water rarely causes excitement in the scientific community, but a few milligrams of liquid extracted from a meteorite may have started to answer one of the great mysteries of planetary science.

Were the channels seen on the surface of Mars carved by once great torrents of rushing water or by some other process?

Dr. Everett Gibson of NASA's Johnson Space Center (JSC), Houston, Planetary Sciences Branch; Dr. Haraldur Karlsson, formerly a National Research Council postdoctoral fellow at JSC; and scientists at the University of Chicago have analyzed drops of water extracted from several meteorites believed to have come from Mars and have concluded that the oxygen isotopes in the water were extraterrestrial.

"It's really a beautiful piece of scientific work to do this analysis," Gibson said. "We are extremely pleased with the results of this team effort." The results of the team's findings are being published in today's issue of the journal SCIENCE.

Photographs returned to Earth from the Mariner 9 and Viking spacecraft show features that suggest Mars once may have had a water-rich atmosphere and flowing water on its surface. Sometime in its history, however, most of the water apparently disappeared, leaving only minute amounts of vapor in the atmosphere.

Through the years, several meteorites have been collected on Earth that scientists have identified as Martian by comparing them to information gleaned by the Viking spacecraft. Six of these meteorites were used in the water extraction procedure.

Gibson said the meteorites were heated in steps in a small vacuum system at JSC to extract trace amounts of water. The water samples were hand-carried to the University of Chicago for

- more -

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analysis of oxygen isotopes. Although the water droplets were less than 1/64ths of an inch in diameter, it was enough to do the analysis.

The analysis determined that the oxygen isotopes in the water were different from the oxygen isotopes in the silicate portion of the meteorites. In other words, the water had a different parent source than the oxygen in the silicate minerals in the meteorites. That parent source could have been the Martian atmosphere, an ancient Martian ocean or even a comet that impacted the planet, Gibson said.

The lack of homogeneous oxygen isotopes on Mars supports the theory that Mars does not have plate tectonics. If such a process had been active on Mars, the oxygen isotopes would have been homogenized as they are on Earth.

Findings from the work completed by the team may answer some questions about the processes operating in the solar system, but the findings raise other questions -- what happened to the water on Mars and does Earth have the same destiny?

"These are large and difficult questions to comprehend," Gibson said, "but perhaps if we can trace the origins and alterations of planetary atmospheres and oceans, the evolution of our solar system may be better understood."

Besides Gibson and Karlsson, who is now in the Department of Geosciences at Texas Tech University, Lubock, team members included Robert N. Clayton and Toshiko K. Mayeda of the Department of Geophysical Sciences and the Enrico Fermi Institute at the University of Chicago.

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# NASA News

National Aeronautics and  
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For Release

Barbara Schwartz  
RELEASE NO. 92-016

March 16, 1992

## SPACE SHUTTLE CREW ASSIGNMENTS ANNOUNCED

Crew members for four 1993 Space Shuttle missions were named today.

Frank L. Culbertson, Jr., Capt., U.S. Navy, has been selected to command Space Shuttle mission STS-51 scheduled for early 1993. Culbertson and his crew will deploy the Advanced Communications Technology Satellite (ACTS) and the German-developed Astronomy Telescope-Shuttle Pallet Satellite (ASTRO/SPAS). ACTS, propelled by a Transfer Orbit Stage booster to geosynchronous orbit, will test technology for future communications systems. ASTRO/SPAS will carry the Orfeus telescope to study radiation absorbing material in the solar system. Other crew members are:

William F. Readdy, Pilot  
Daniel W. Bursch, Lt. Cdr., U.S. Navy, mission specialist  
James H. Newman, Ph.D., mission specialist  
Carl E. Walz, Maj., U.S. Air Force, mission specialist

Culbertson was the Pilot on STS-38, a Department of Defense mission in November 1990. He was born in Charleston, S.C., but considers Holly Hill, S.C., his hometown. Culbertson received a B.S. degree in aerospace engineering from the U.S. Naval Academy in 1971.

Readdy was a mission specialist and orbit pilot on STS-42 in Jan. 1992, during which 55 scientific experiments were performed aboard the International Microgravity Laboratory-1. Readdy was born in Quonset Point, R.I., but considers McLean, Va., his hometown. He received a B.S. degree in aeronautical engineering from the U.S. Naval Academy in 1974.

Bursch was born in Bristol, Pa., but considers Vestal, N.Y., his hometown. This is his first mission. He received a B.S. degree in physics from the U.S. Naval Academy in 1979 and an M.S. degree in engineering science from the Naval Postgraduate school in 1991.

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Newman was born in the Trust Territory of the Pacific Islands but considers San Diego, Calif., his hometown. This is his first mission. Newman received a B.A. degree in physics from Dartmouth College in 1978 and M.A. and Ph.D. degrees in physics from Rice University in 1982 and 1984, respectively.

Walz, born in Cleveland, is assigned to his first mission. He received a B.S. degree in physics from Kent State University in 1977 and an M.S. degree in solid state physics from John Carroll University in 1979.

Kenneth Cameron, Col., U.S. Marine Corps, has been selected as commander of Space Shuttle mission STS-56, also scheduled for early 1993. STS-56 is the second Atmospheric Laboratory for Applications and Science (ATLAS) mission. Additionally, Cameron and his crew will deploy and retrieve the Spartan 201 satellite which will collect data to study the physics of solar-wind acceleration. Other crew members are:

Stephen S. Oswald, Pilot  
Kenneth D. Cockrell, mission specialist  
Michael Foale, Ph.D., mission specialist  
Ellen Ochoa, Ph.D., mission specialist

Cameron, Pilot on the STS-37 Compton Gamma Ray Observatory mission in April 1991, was born in Cleveland. He received B.S. and M.S. degrees in aeronautics and astronautics from MIT in 1978 and 1979.

Oswald, Pilot on the STS-42 IML-1 mission, was born in Seattle, Wash., but considers Bellingham, Wash., his hometown. He received a B.S. degree in aerospace engineering from the U.S. Naval Academy in 1973.

Cockrell, who was born in Austin, Texas, is assigned to his first mission. He received a B.S. degree in mechanical engineering from the University of Texas in 1972 and an M.S. degree in aeronautical systems from the University of West Florida in 1974.

Foale, a U.S. citizen, was born in England and considers Cambridge his hometown. He is scheduled to fly as a mission specialist on the first ATLAS mission later this month. He received a B.A. degree in physics from Queen's College in 1978 and a Ph.D. degree in laboratory astrophysics from Cambridge University in 1982.

Ochoa was born in Los Angeles but considers LaMesa, Calif., her hometown. This is her first mission. Ochoa received a B.S. degree in physics from San Diego State University in 1980 and an M.S. and Ph.D. in electrical engineering from Stanford University in 1981 and 1985, respectively.

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Ronald J. Grabe, Col., U.S. Air Force, has been selected to command Space Shuttle mission STS-57 scheduled to launch in mid-1993. STS-57 will carry the commercial middeck augmentation module called SPACEHAB and retrieve the European Retrievable Carrier. Other crew members are:

Brian Duffy, Lt. Col., U.S. Air Force, Pilot  
 G. David Low, Payload Commander (previously named)  
 Janice E. Voss, Ph.D., mission specialist (previously named)  
 Nancy J. Sherlock, Capt., U.S. Army, mission specialist  
 Peter J. K. "Jeff" Wisoff, Ph.D., mission specialist

Grabe has flown on three Shuttle missions, as Pilot on STS-51J in October 1985 and STS-30 in May 1989 and as Commander on STS-42 earlier this year. Born in New York, N.Y., he received a B.S. degree in engineering science from the U.S. Air Force Academy in 1966 and studied aeronautics as a Fulbright Scholar at the Technische Hochschule, Darmstadt, West Germany, in 1967.

Duffy is scheduled to pilot the STS-45 ATLAS-01 mission later this month. Born in Boston, he received a B.S. degree in mathematics from the U.S. Air Force Academy in 1975 and an M.S. degree in systems management from the University of Southern California in 1981.

Sherlock was born in Wilmington, Del., but considers Troy, Ohio, her hometown. She received a B.A. degree in biological science from Ohio State University in 1980 and an M.S. degree in safety engineering from the University of Southern California in 1985. This is her first mission.

Wisoff, born in Norfolk, Va., received a B.S. degree in physics from the University of Virginia in 1980 and M.S. and Ph.D. degrees in applied physics from Stanford University in 1982 and 1986, respectively. This is his first mission.

Story Musgrave, M.D., is named Payload Commander for the STS-61 Hubble Space Telescope Revisit mission scheduled for late 1993. Musgrave will be making his fifth Space Shuttle flight. The remainder of the crew will be assigned at a later date.

Musgrave, born in Boston, has six degrees, including an M.D. degree from Columbia University in 1964 and an M.S. degree in physiology and biophysics from the University of Kentucky in 1966. He was a mission specialist on STS-6 in April 1983, Spacelab-2 in August 1985, STS-33 in November 1989 and STS-44 in November 1991.

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# NASA News

National Aeronautics and  
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Lyndon B. Johnson Space Center  
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For Release

March 30, 1992

Barbara Schwartz  
RELEASE NO. 92-17

## SPACE SHUTTLE STS-49 PREFLIGHT BRIEFINGS SET

A series of briefings on Endeavour's maiden flight will be held April 7 and 8 at the Johnson Space Center, Houston (JSC). Space Shuttle Mission STS-49 crew members will rendezvous, capture, repair and deploy the stranded International Telecommunications Satellite (INTELSAT) and test and evaluate a variety of Space Station Freedom assembly techniques during three space walks. The briefing schedule follows (all times EDT):

Tuesday, April 7

- |               |  |
|---------------|--|
| 9-10:30 a.m.  | Mission Overview by Flight Director Al Pennington  |
| 10:30-11 a.m. | Payload Briefing by Lak Virdee, International Telecommunications Satellite Organization (INTELSAT) |
| 11-11:30 a.m. | Commercial Protein Crystal Growth<br>Dr. Marianna Long, CMC, Principal Investigator                |
| 11:30 a.m.-12 | Endeavour Overview<br>Daniel Germany, Manager, Orbiter & GFE Projects, JSC                         |

Wednesday, April 8

9-10 a.m. STS-49 Crew Briefing

All briefings will be carried on NASA Select television with two-way audio from NASA Headquarters and other NASA Centers. NASA Select programming is carried on SATCOM F2R, transponder 13, at 72 degrees west longitude.

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Additional activities for news media attending briefings at the Johnson Space Center will be round-robin interviews with the astronauts following the crew briefing. Media representatives wishing to participate in these interviews should notify the JSC newsroom by the afternoon of April 3.

On April 8, there will be hands-on demonstrations of the Assembly of Station by EVA Methods (ASEM) hardware, including seeing STS-49 crew members during a training activity in the Weightless Environment Training Facility and demonstrations of other payload equipment in the Shuttle Training Facility. The interviews and demonstrations will not be televised.

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# NASA News

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For Release

March 31, 1992

BARBARA SCHWARTZ  
RELEASE NO. 92-018

## 1992 ASTRONAUT CANDIDATES SELECTED

The National Aeronautics and Space Administration today announced the selection of 19 new astronaut candidates for the Space Shuttle program.

The candidates were chosen from among 2,054 qualified applicants, 87 of whom received interviews and medical examinations in December and January. They will report to the Johnson Space Center in August 1992 to begin a year of training and evaluation, after which they will receive technical assignments leading to selection for Shuttle flight crews.

The 1992 group consists of 4 pilot astronaut candidates and 15 mission specialist astronaut candidates, including 9 civilians and 10 military officers.

A listing of the candidates and biographical data follows:

## 1992 ASTRONAUT CANDIDATES

Daniel T. Barry, M.D., Ph.D.	Civilian	Mission Specialist
Cdr. Charles E. Brady, Jr.	U.S. Navy	Mission Specialist
Capt. Catherine G. Coleman	U.S. Air Force	Mission Specialist
Michael L. Gernhardt, Ph.D.	Civilian	Mission Specialist
John M. Grunsfeld, Ph.D.	Civilian	Mission Specialist
Capt. Scott J. Horowitz	U.S. Air Force	Pilot
Lcdr. Brent W. Jett, Jr.	U.S. Navy	Pilot
Mr. Kevin R. Kregel	Civilian	Pilot
Lcdr. Wendy B. Lawrence	U.S. Navy	Mission Specialist
Cdr. Jerry M. Linenger	U.S. Navy	Mission Specialist
Capt. Richard M. Linnehan	U.S. Army	Mission Specialist
Lcdr. Michael E. Lopez-Alegria	U.S. Navy	Mission Specialist
Scott E. Parazynski, M.D.	Civilian	Mission Specialist
Lcdr. Kent V. Rominger	U.S. Navy	Pilot
Cdr. Winston E. Scott	U.S. Navy	Mission Specialist
Mr. Steven L. Smith	Civilian	Mission Specialist
Mr. Joseph R. Tanner	Civilian	Mission Specialist
Andrew S. W. Thomas, Ph.D.	Civilian	Mission Specialist
Mary E. Weber, Ph.D.	Civilian	Mission Specialist

### BIOGRAPHICAL DATA

NAME: Daniel T. Barry, Ph.D., M.D., Mission Specialist

BIRTHDATE/PLACE: December 30, 1953 - Norwalk, Connecticut

RESIDENCE: Ann Arbor, Michigan

EDUCATION: Bolton High School, Alexandria, Louisiana  
BS, Electrical Engr., Cornell Univ., 1975  
MSE, Electrical Engr./Computer Science, Princeton Univ., 1977  
MA, Electrical Engr./Computer Science, Princeton Univ., 1977  
PhD, Electrical Engr./Computer Science, Princeton Univ., 1980  
MD, Univ. of Miami, 1982

CURRENT POSITION: Assistant Professor  
University of Michigan Medical Center  
Ann Arbor, Michigan

PARENTS: Mr. & Mrs. Albeus E. Barry, Alexandria, Louisiana

MARITAL STATUS: Married to the former Susan R. Feinstein

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NAME: Charles E. Brady, Jr., Commander, USN, Mission Specialist

BIRTHDATE/PLACE: August 12, 1951 - Pinehurst, North Carolina

RESIDENCE: Oak Harbor, Washington

EDUCATION: North Moore High School, Robbins, North Carolina  
MD, Duke Univ., 1975

CURRENT POSITION: Flight Surgeon  
NAS Whidbey Island, Washington

PARENTS: Mr. & Mrs. Charles E. Brady, Sr., Robbins, North Carolina

MARITAL STATUS: Married to the former Cathy Scherer

U.S. Gov't

NAME: Catherine G. Coleman, Captain, USAF, Mission Specialist  
BIRTHDATE/PLACE: December 14, 1960 - Charleston, South Carolina  
RESIDENCE: Dayton, Ohio  
EDUCATION: W. T. Woodson High School, Fairfax, Virginia  
BS, Chemistry, MIT, 1983  
PhD, Polymer Science & Engr., Univ. of Massachusetts, 1991  
CURRENT POSITION: Research Chemist  
Wright-Patterson AFB, Ohio  
PARENTS: James J. Coleman, Vancouver, Washington  
Anne L. Doty, Westerly, Rhode Island  
MARITAL STATUS: Single

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NAME: Michael L. Gernhardt, Ph.D., Mission Specialist  
BIRTHDATE/PLACE: May 4, 1956 - Mansfield, Ohio  
RESIDENCE: Webster, Texas  
EDUCATION: Malabar High School, Mansfield, Ohio  
BS, Physics, Vanderbilt Univ., 1978  
MS, Bioengineering, Univ. of Pennsylvania, 1983  
PhD, Bioengineering, Univ. of Pennsylvania, 1991  
CURRENT POSITION: Vice President/General Manager  
Oceaneering Space Systems  
Webster, Texas  
PARENTS: George M. Gernhardt, Marco Island, Florida  
Suzanne C. Winters, Whitestone, Virginia  
MARITAL STATUS: Single

NAME: John M. Grunsfeld, Ph.D., Mission Specialist  
BIRTHDATE/PLACE: October 10, 1958 - Chicago, Illinois  
RESIDENCE: Pasadena, California  
EDUCATION: Highland Park High School, Highland Park, Illinois  
BS, Physics, MIT, 1980  
MS, Physics, Univ. of Chicago, 1984  
PHD, Physics, Univ. of Chicago, 1988  
CURRENT POSITION: Senior Research Fellow  
California Institute of Technology  
Pasadena, California  
PARENTS: Mr. & Mrs. Ernest A. Grunsfeld, Highland Park, Illinois  
MARITAL STATUS: Married to the former Carol E. Schiff

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NAME: Scott J. Horowitz, Captain, USAF, Pilot  
BIRTHDATE/PLACE: March 24, 1957 - Philadelphia, Pennsylvania  
RESIDENCE: Edwards AFB, California  
EDUCATION: Newbury Park High School, Newbury Park, California  
BS, Engineering, California State Univ.-Northridge, 1978  
MS, Aerospace Engineering, Georgia Tech, 1979  
PHD, Aerospace Engineering, Georgia Tech, 1982  
CURRENT POSITION: Experimental Test Pilot  
Edwards AFB, California  
PARENTS: Seymour B. Horowitz, Thousands Oaks, California  
Iris D. Chester, Santa Monica, California  
MARITAL STATUS: Married to the former Lisa Marie Kern

NAME: Brent W. Jett, Jr., Lieutenant Commander, USN, Pilot

BIRTHDATE/PLACE: October 5, 1958 - Pontiac, Michigan

RESIDENCE: California, Maryland

EDUCATION: Northeast High School, Oakland Park, Florida  
BS, Aerospace Engr., U.S. Naval Academy, 1981  
MS, Aeronautical Engr., U.S. Naval Postgrad School, 1989

CURRENT POSITION: Fighter Pilot/Squadron Department Head  
VF-74 (USS Saratoga)  
NAS Oceana, Virginia

PARENTS: Mr. & Mrs. Brent W. Jett, Sr., Ft. Lauderdale, Florida

MARITAL STATUS: Single

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NAME: Kevin R. Kregel, Pilot

BIRTHDATE/PLACE: September 16, 1956 - New York, New York

RESIDENCE: Houston, Texas

EDUCATION: Amityville Memorial High School, Amityville, New York  
BS, Astronautical Engineering, USAF Academy, 1978  
MPA, Troy State Univ., 1988

CURRENT POSITION: Aeronautical Research Pilot  
Johnson Space Center  
Houston, Texas

PARENTS: Alfred H. Kregel, Jr., Crossville, Tennessee  
Frances T. Kregel, Deceased

MARITAL STATUS: Married to the former Jeanne F. Kammer

NAME: Wendy B. Lawrence, Lieutenant Commander, USN, Mission Specialist  
BIRTHDATE/PLACE: July 2, 1959 - Jacksonville, Florida  
RESIDENCE: Crownsville, Maryland  
EDUCATION: Fort Hunt High School, Alexandria, Virginia  
BS, Ocean Engineering, U.S. Naval Academy, 1981  
MS, Ocean Engineering, MIT, 1988  
CURRENT POSITION: Physics Instructor  
U.S. Naval Academy  
Annapolis, Maryland  
PARENTS: William P. Lawrence, Crownsville, Maryland  
Anne Haynes, Alvadore, Oregon  
MARITAL STATUS: Single

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NAME: Jerry M. Linenger, Commander, USN, Mission Specialist  
BIRTHDATE/PLACE: January 16, 1955 - Mt. Clemens, Michigan  
RESIDENCE: San Diego, California  
EDUCATION: East Detroit High School, Detroit, Michigan  
BS, Bioscience, U.S. Naval Academy, 1977  
MD, Wayne State Univ., 1981  
MS, Systems Management, USC, 1988  
MPH, Univ. of North Carolina, 1989  
PHD, Epidemiology, Univ. of North Carolina, 1989  
CURRENT POSITION: Medical Researcher  
Naval Health Research Center  
San Diego, California  
PARENTS: Mr. & Mrs. Donald W. Linenger, East Detroit, Michigan  
MARITAL STATUS: Married to the former Kathryn M. Bartmann

U.S. Gov't

NAME: Richard M. Linnehan, Captain, USA, Mission Specialist

BIRTHDATE/PLACE: September 19, 1957 - Lowell, Massachusetts

RESIDENCE: San Diego, California

EDUCATION: Pelham High School, Pelham, New Hampshire  
BS, Zoology, Univ. of New Hampshire, 1980  
DVM, Ohio State Univ., 1985

CURRENT POSITION: Clinical Veterinarian  
U.S. Army Element  
Naval Ocean Systems Center  
San Diego, California

PARENTS: Richard H. Linnehan, Deceased  
Carol J. Robinson, Townsend, Massachusetts

MARITAL STATUS: Single

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NAME: Michael E. Lopez-Alegria, Lt. Commander, USN, Mission Specialis

BIRTHDATE/PLACE: May 30, 1958 - Madrid, Spain

RESIDENCE: Waldorf, Maryland

EDUCATION: Mission Viejo High School, Mission Viejo, California  
BS, Systems Engineering, U.S. Naval Academy, 1980  
MS, Aeronautical Engineering, U.S. Naval Postgrad School, 1988

CURRENT POSITION: ES-3A Program Manager  
Naval Air Test Center  
NAS Patuxent River, Maryland

PARENTS: Mr. & Mrs. Eladio Lopez-Alegria, Mission Viejo, California

MARITAL STATUS: Married to the former Julieann Ridge

NAME: Scott E. Parazynski, M.D., Mission Specialist  
BIRTHDATE/PLACE: July 28, 1961 - Little Rock, Arkansas  
RESIDENCE: Evergreen, Colorado  
EDUCATION: American Community High School, Athens, Greece  
BS, Biology, Stanford Univ., 1983  
MD, Stanford Univ., 1989  
CURRENT POSITION: Emergency Medicine Resident  
Denver Affiliated Residency in Emergency Medicine  
Denver, Colorado  
PARENTS: Mr. & Mrs. John Parazynski, Bellevue, Washington  
MARITAL STATUS: Single

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NAME: Kent V. Rominger, Lieutenant Commander, USN, Pilot  
BIRTHDATE/PLACE: August 7, 1956 - Del Norte, Colorado  
RESIDENCE: Poway, California  
EDUCATION: Del Norte High School, Del Norte, Colorado  
BS, Civil Engineering, Colorado State Univ., 1978  
MS, Aeronautical Engineering, U.S. Naval Postgrad School, 1987  
CURRENT POSITION: Operations Officer  
VF-211  
NAS Miramar  
San Diego, California  
PARENTS: Mr. & Mrs. Ralph V. Rominger, Del Norte, Colorado  
MARITAL STATUS: Married to the former Mary Sue Rule

NAME: Winston E. Scott, Commander, USN, Mission Specialist  
BIRTHDATE/PLACE: August 6, 1950 - Miami, Florida  
RESIDENCE: Yardley, Pennsylvania  
EDUCATION: Coral Gables High School, Coral Gables, Florida  
BA, Music, Florida State Univ., 1972  
MS, Aeronautical Engineering, U.S. Naval Postgrad School, 1980  
CURRENT POSITION: Deputy Director, Tactical Air Systems Dept.  
Naval Air Development Center  
Warminster, Pennsylvania  
PARENTS: Mr. & Mrs. Alston J. Scott, Sr., Miami, Florida  
MARITAL STATUS: Married to the former Marilyn K. Robinson

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NAME: Steven L. Smith, Mission Specialist  
BIRTHDATE/PLACE: December 30, 1958 - Phoenix, Arizona  
RESIDENCE: Houston, Texas  
EDUCATION: Leland High School, San Jose, California  
BS, Electrical Engineering, Stanford Univ., 1981  
MS, Electrical Engineering, Stanford Univ., 1982  
MBA, Stanford Univ., 1987  
CURRENT POSITION: Payload Flight Controller  
Johnson Space Center  
Houston, Texas  
PARENTS: Mr. & Mrs. Robert H. Smith, San Jose, California  
MARITAL STATUS: Married to the former Margaret M. Brannigan

NAME: Joseph R. Tanner, Mission Specialist  
BIRTHDATE/PLACE: January 21, 1950 - Danville, Illinois  
RESIDENCE: Houston, Texas  
EDUCATION: Danville High School, Danville, Illinois  
BS, Mechanical Engineering, Univ. of Illinois, 1973  
CURRENT POSITION: Deputy Chief, Aircraft Operations Division Johnson  
Space Center  
Houston, Texas  
PARENTS: Mr. & Mrs. Lewis W. Tanner, Danville, Illinois  
MARITAL STATUS: Married to the former Martha A. Currie

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NAME: Andrew S. W. Thomas, Ph.D., Mission Specialist  
BIRTHDATE/PLACE: December 18, 1951 - Adelaide, Australia  
RESIDENCE: Pasadena, California  
EDUCATION: Saint Peters College, Adelaide, Australia  
BE, Mechanical Engr., Univ. of Adelaide (Australia), 1972  
PhD, Mechanical Engr., Univ. of Adelaide (Australia), 1978  
CURRENT POSITION: Group Supervisor-Mircrogravity Research  
Jet Propulsion Laboratory  
Pasadena, California  
PARENTS: Adrian C. Thomas, Hackham, Australia  
Mary E. Thomas, N. Adelaide, Australia  
MARITAL STATUS: Single

**NAME:** Mary E. Weber, Ph.D., Mission Specialist

**BIRTHDATE/PLACE:** August 24, 1962 - Cleveland, Ohio

**RESIDENCE:** Austin, Texas

**EDUCATION:** Bedford High School, Bedford, Ohio  
BS, Chemical Engineering, Purdue Univ., 1984  
PHD, Chemistry, Univ. of California-Berkeley, 1988

**CURRENT POSITION:** Materials Engineer  
Texas Instruments (on assignment to SEMATECH)  
Austin, Texas

**PARENTS:** Andrew M. Weber, Jr., Deceased  
Joan E. Weber, Mentor, Ohio

**MARITAL STATUS:** Single

# NASA News

National Aeronautics and  
Space Administration

Lyndon B. Johnson Space Center  
Houston, Texas 77058  
AC 713 483-5111

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For Release

Barbara Schwartz  
RELEASE NO. 92-019

April 8, 1992

STS-45 POSTFLIGHT CREW PRESS CONFERENCE SCHEDULED APR. 13

The STS-45 postflight crew press conference will be held Monday, April 13, at 2:30 p.m. CDT at the Johnson Space Center, Houston (JSC), in building 2, room 135. The crew members will describe the Atmospheric Laboratory for Applications and Science-1 mission while narrating film highlights.

News media are invited to participate at JSC or by two-way audio from NASA Headquarters and other centers. The press conference will be broadcast on NASA Select television, SATCOM F2R, transponder 13, located at 72 degrees west longitude.

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# NASA News

National Aeronautics and  
Space Administration

Lyndon B. Johnson Space Center  
Houston, Texas 77058  
AC 713 483-5111

For Release

April 24, 1992

Jeffrey Carr  
Release No. 92-020

## FLIGHT CONTROL OF STS-49

Flight control for STS-49, the maiden voyage of Endeavour, will follow the procedures and traditions common to U.S. manned space flights since 1965, when the Mission Control Center was first used.

Responsibility for conduct of flight operations will revert to the Mission Control Center (MCC) in Houston once Endeavour's two solid rocket boosters ignite. Mission support in the MCC will begin five hours prior to launch and continue through landing.

The primary objective of mission STS-49 is to retrieve and repair the INTELSAT VI satellite, and to demonstrate EVA methods for the assembly of large orbiting structures. After being cleared for orbital operations, the crew and flight controllers in Mission Control will begin plotting and executing a series of maneuvers designed to place Endeavour in position to capture the INTELSAT VI on flight day four. Satellite controllers at the INTELSAT Control Center in Washington, D.C. will be responsible for maneuvering the INTELSAT VI into the "control box" and de-rotating the satellite to about .6 rpm for capture. Following the capture, repair, and release of the satellite, the INTELSAT Control Center will command the newly installed perigee kick motor to propel the satellite to its destination orbit. The MCC will continue to control flight operations throughout the remainder of the flight.

Flight operations will be conducted from Flight Control Room One (FCR-1) on the second floor of the MCC located in Bldg. 30 at the Johnson Space Center. The teams of flight controllers will alternate shifts in the control center and in nearby analysis and support facilities. The handover between each team takes about an hour and allows each flight controller to brief his or her replacement on developments during the previous two shifts.

The four flight control teams for this mission will be referred to as the Ascent/Entry, Orbit 1, Orbit 2, and Planning teams. The ascent and entry phases will be conducted by flight director N. Wayne Hale, Jr. The Orbit 1 team will be headed by lead flight director Granvil A. (Al) Pennington. The Orbit 2 team, will be directed by flight director Philip L. Engelauf. The Planning team will be led by J. Milt Heflin.

## MCC POSITIONS AND CALL SIGNS FOR STS-49

The flight control positions in the MCC, and their responsibilities, are:

### **Flight Director (FLIGHT)**

Has overall responsibility for the conduct of the mission.

### **Spacecraft Communicator (CAPCOM)**

By tradition an astronaut; responsible for all voice contact with the flight crew.

### **Flight Activities Officer (FAO)**

Responsible for procedures and crew timelines; provides expertise on flight documentation and checklists; prepares messages and maintains all teleprinter and/or Text and Graphics System traffic to the vehicle.

### **Integrated Communications Officer (INCO)**

Responsible for all Orbiter data, voice and video communications systems; monitors the telemetry link between the vehicle and the ground; oversees the uplink command and control processes.

### **Flight Dynamics Officer (FDO)**

Responsible for monitoring vehicle performance during the powered flight phase and assessing abort modes; calculating orbital maneuvers and resulting trajectories; and monitoring vehicle flight profile and energy levels during reentry.

### **Trajectory Officer (TRAJECTORY)**

Also known as "TRAJ," this operator aids the FDO during dynamic flight phases and is responsible for maintaining the trajectory processors in the MCC and for trajectory inputs made to the Mission Operations Computer.

### **Guidance, Navigation & Control Systems Engineer (GNC)**

Responsible for all inertial navigational systems hardware such as star trackers, radar altimeters and the inertial measurement units; monitors radio navigation and digital autopilot hardware systems.

### **Guidance & Procedures Officer (GPO)**

Responsible for the onboard navigation software and for maintenance of the Orbiter's navigation state, known as the state vector. Also responsible for monitoring crew vehicle control during ascent, entry, or rendezvous.

### **Rendezvous Guidance and Procedures Officer (RENDEZVOUS)**

The RENDEZVOUS GPO is specialist who monitors onboard navigation of the Orbiter during rendezvous and proximity operations. The UARS deploy maneuver involves an active separation, using rendezvous radar to verify separation rates, requiring the support of this specialist

### **Environmental Engineer & Consumables Manager (EECOM)**

Responsible for all life support systems, cabin pressure, thermal control and supply and waste water management; manages consumables such as oxygen and hydrogen.

### **Electrical Generation and Illumination Officer (EGIL)**

Responsible for power management, fuel cell operation, vehicle lighting and the master caution and warning system.

### **Payloads Officer (PAYLOADS)**

Coordinates all payload activities; serves as principal interface with remote payload operations facilities.

### **Data Processing Systems Engineer (DPS)**

Responsible for all onboard mass memory and data processing hardware; monitors primary and backup flight software systems; manages operating routines and multi-computer configurations.

### **Propulsion Engineer (PROP)**

Manages the reaction control and orbital maneuvering thrusters during all phases of flight; monitors fuel usage and storage tank status; calculates optimal sequences for thruster firings.

### **Booster Systems Engineer (BOOSTER)**

Monitors main engine and solid rocket booster performance during ascent phase.

### **Ground Controller (GC)**

Coordinates operation of ground stations and other elements of worldwide space tracking and data network; responsible for MCC computer support and displays.

### **Maintenance, Mechanical, Arm & Crew Systems (MMACS)**

Formerly known as RMU; responsible for remote manipulator system; monitors auxilliary power units and hydraulic systems; manages payload bay and vent door operations.

### **Extravehicular Activities (EVA)**

A specialist responsible for monitoring and coordinating preparations for and execution of space walks. Responsibilities include monitoring suit and EVA hardware performance.

### **Payload Data & Retrieval System (PDRS)**

A specialist responsible for monitoring and coordinating the operation of the remote manipulator system.

### **Flight Surgeon (SURGEON)**

Monitors health of flight crew; provides procedures and guidance on all health-related matters.

### **Public Affairs Officer (PAO)**

Provides real-time explanation of mission events during all phases of flight.

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## STS-49 FLIGHT CONTROL TEAM STAFFING

<u>POSITION</u>	<u>ASCENT/ENTRY</u>	<u>ORBIT 1</u>	<u>ORBIT 2</u>	<u>PLANNING</u>
FLIGHT	Wayne Hale	Al Pennington	Phil Engelauf	Milt Heflin
CAPCOM	Sid Gutierrez (A) Jim Halsell (E)	Carl Walz John Casper	Sam Gemar Ken Reightler	Jeff Wisoff
FAO	Pete Hasbrook	Pete Hasbrook	Tony Griffith	Debbie Jackson
INCO	Jay Conner	Jay Conner	Harry Black	Richard LaBrode
FDO	Brian Perry (A) Bruce Hilty (E)	Mark Haynes	Phil Burley	Dick Theis
TRAJ	Ed Gonzalez (A) Carson Sparks (E)	Steve Stich	Bill Britz	Mark Riggio
GPO/Rendezvous	Jeff Bertsch (A) Glen Hillier (E)	Chris Meyer	Linda Gavin	Mark Thomas
GNC	Stanley Schaefer	Stanley Schaefer	Bradley Schoenbauer	Charles Alford
EECOM	Dave Herbek	Dave Herbek	Quinn Carelock	Dan Molina

EGIL	Brian Anderson	Brian Anderson	Robert Armstrong	Ben Pawlik
PAYLOADS	Nellie Carr	Nellie Carr	Jeff Hanley	Steve Smith
DPS	Gloria Araiza	Gloria Araiza	Gary Sham	James Hill
PROP	Tony Ceccacci	Tony Ceccacci	Thomas Lazo	Carlyle Lowe
BOOSTER	Terri Stowe (A) Ken Dwyer (E)			
GC	John Snyder John Wells	Mike Marsh Johnnie Brothers	Ed Klein Dennis Williams	Frank Stolarski Al Davis
EVA	James Thornton	James Thornton	Gerald Miller Richard Fullerton	Charles Armstrong
PDRS	Ron Zaguli	Ron Zaguli	Dave Moyer (ASEM) Albert Lee (Intelsat)	Gary Pollack
MMACS	R. Kevin McCluney	R. Kevin McCluney	Alan Bachik	Ladessa Hicks
SURGEON	Larry Pepper	Brad Beck	Phil Stepaniak	(On Call)
PAO	Kyle Herring (A) Kari Fluegel (E)	Kyle Herring	Jeff Carr	Kelly Humphries

# NASA News

National Aeronautics and  
Space Administration

Lyndon B. Johnson Space Center  
Houston, Texas 77058  
AC 713 483-5111

For Release

April 30, 1992

Stephen A. Nesbitt  
Release No. 92-021

NOTE TO EDITORS: SENATOR PHIL GRAMM PRESS CONFERENCE

U.S. Senator Phil Gramm will hold a press conference Saturday, May 2, 1992 in Building 9N at the NASA Johnson Space Center to announce the first use in this five-state area of new compressed natural gas-powered vehicles.

Participating in the event with Sen. Gramm will be JSC's Acting Director Paul J. Weitz and General Services Administration Regional Director Hollis Rutledge.

Thirty-five of the CNG-powered vans and trucks will be used in general maintenance work at JSC beginning this summer. GSA purchases the vehicles for government use.

The event will begin at approximately 11:45 a.m. inside Building 9N. Interested media with press identification should be in place prior to the start of the press conference. Entrance is through the northeast door.

Sen. Gramm and the other participants will be available to the media immediately following the ceremony and inspection of the vehicles.

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# NASA News

National Aeronautics and  
Space Administration

Lyndon B. Johnson Space Center  
Houston, Texas 77058  
AC 713 483-5111

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For Release

Kari Fluegel  
RELEASE No. 92-22

May 7, 1992

## NASA STUDIES TEAM PERFORMANCE IN 30-DAY UNDERSEA MISSION

The Florida Keys may not seem as distant as the Moon, but for four men during the next 30 days, it might as well be.

During "La Chalupa 30," sponsored by the Marine Resources Development Foundation (MRDF) of Key Largo, Fla., four men will conduct investigations in an underwater habitat without any direct outside human contact for 30-days, giving the Behavior and Performance Laboratory at NASA's Johnson Space Center, Houston, the opportunity to study team performance as part of its continuing investigation to identify pertinent psychological issues for long duration space flight.

At present, NASA employs passive studies to develop its knowledge base on long-term team performance and human behavior, such as talking to crew members of existing remote facilities including polar expeditions. Those studies, however, have progressed to the point at which researchers are ready to test improved behavioral collection methods, said Dr. Al Holland, Head of the Behavior and Performance Laboratory.

"The mission will serve as an environment which is analogous to future extended space missions on the Shuttle or Space Station," Holland said. "This project is primarily a testbed for field data collection methods and procedures. The information collected will assist investigators in conducting further studies in field environments which are of longer duration and possibly in more remote areas."

- more -

- 2 -

The four aquanauts will live and work in the undersea laboratory with regular excursions into the lagoon to perform the in-the-water portion of their marine research projects -- an analogue to extravehicular activity during space flight. They will be in contact with surface crews via voice and video links, but no direct contact will occur for the duration of the test.

The behavioral investigations address four primary areas pertinent to extended missions in confined environments: individual health and well-being, work, team maintenance and data collection methods.

Tests looking at individual health and well being include studies of sleep, cognitive functioning and stress, while those focusing on team maintenance will collect individuals' perceptions on the state of the team's functioning, communication, leadership and social climate. Perceptions of work organization also will be collected and investigations of methodology will help investigators evaluate the different ways of collecting behavioral information from people in remote environments.

MRDF is providing the 3,300-cubic-foot underwater habitat, originally named La Chalupa. Formerly a research station operating off the coast of Puerto Rico, the facility has been used as a commercial undersea lodge since 1986.

The aquanauts, all recruited by MRDF, are Chris Olstad, 37, Mission Commander and an MRDF biologist; Richard A. Presley, 33, Deputy Crew Commander and a hydroponics developer with BioLabs in Key Largo; Bill Soeffing, 35, a cell biologist at Sioux Falls College, Sioux Falls, S.D.; and John Conant, 34, a hyperbaric emergency medical technician from Fort Meyers, Fla.

"By the end of the 30 days, we will have a better understanding of the viability of certain field methods, hardware and software," Holland said. "We also will be in a better position to establish guidelines and requirements for 30-day space missions."

- end -

# NASA News

National Aeronautics and  
Space Administration

**Lyndon B. Johnson Space Center**  
Houston, Texas 77058  
AC 713 483-5111

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For Release:

Steve Nesbitt  
RELEASE NO. 92-023

May 9, 1992

**NOTE TO EDITORS: NASA ADMINISTRATOR DANIEL GOLDIN  
IN HOUSTON**

NASA Administrator Daniel Goldin will be available to the media at noon Monday at the Johnson Space Center in Houston. Mr. Goldin, recently appointed by President George Bush, is making his first visit to JSC since being named Administrator. He will be available in room 135, building 2 at JSC. Please notify our newsroom if you plan to participate.

# NASA News

National Aeronautics and  
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Lyndon B. Johnson Space Center

Houston, Texas 77058

AC 713 483-5111

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Kelly Humphries/JSC  
713/483-5111

For Release:

5-14-92

Julia Delph/IBM  
713/282-7842

IMMEDIATE

RELEASE: 92-24

## "HISD SPACE DAY" TO BE HELD AT NASA JOHNSON SPACE CENTER

Some 600 fifth graders from the Houston Independent School District will have an opportunity to talk with astronauts and see how they train for space missions during HISD Space Day at Johnson Space Center on May 19.

The purpose of the event is to motivate students who are most at risk of dropping out of school to improve their math and science skills -- skills that are important to their finding good jobs in the future and essential to keeping the U.S. workforce competitive with other nations.

HISD Space Day is a joint project of Johnson Space Center, the Houston Independent School District and 14 Houston-area aerospace companies.

The students were selected from 16 schools in some of Houston's most disadvantaged neighborhoods. The students will travel to Johnson Space Center, where astronauts will talk about their work and answer the students' questions.

Next employees of local aerospace companies will escort the students on tours of the Johnson Space Center and the McDonnell Douglas Space Station development center. There students will have the chance to see first-hand how NASA astronauts train to work on board Space Station Freedom, how components of the space station are assembled and tested here in Houston, and how the space suits that astronauts wear during spacewalks work.

"NASA's future, indeed the future of our nation, hinges on our having an ample supply of people who are proficient in math and science," said Dr. Joseph D. Atkinson, Johnson Space Center Director of Equal Opportunity Programs.

(more)

Added Dr. Atkinson: "It is extremely important to create an excitement for science and engineering careers in all students--especially minority and economically disadvantaged students. Many of these students turn away from science and math early in life, and we hope this day at NASA will spark their interest and provide the role models necessary for them to want to become our future scientists and engineers."

"We especially targeted at-risk students because it's important that they understand that what they learn in school can be applied in interesting and exciting ways in the 'real' world," said Ava Lunsford, corporate communications manager for Bendix Field Engineering Corp., one of the participating companies.

Other companies participating are Rockwell, Bendix, Grumman, CAE Link, IBM, McDonnell Douglas, Digital, Computer Sciences Corp., Loral, Boeing, Barrios Technology, Paramax, Lockheed, Service America Corp., Systems Management American, Honeywell and the Clear Lake Area Economic Development Foundation.

**HISD SPACE DAY  
AT THE NASA JOHNSON SPACE CENTER**

**May 19, 1992**

09:45 a.m.	Students arrive at Johnson Space Center	Visitor Center parking lot
10:00 a.m.	Welcome	Visitor Center Auditorium
10:10 a.m.	Speaker: NASA Astronaut Charles Bolden	"
10:20 a.m.	Space video	"
10:30 a.m.	Speaker: NASA Astronaut Linda Godwin	"
10:40 a.m.	Questions and answers	"
10:55 a.m.	Tours	
	(1) NASA Astronaut Training Facility	Building 9
	PHOTO OPPORTUNITY: Students will tour the life-size mock-up of the Space Station where astronauts train.	
	(2) NASA Visitor Center and Space Museum	Building 2
	PHOTO OPPORTUNITY: Employees of contractor companies working on NASA space programs will guide students through exhibits.	
	(2) McDonnell Douglas Clear Lake Development Center	1300 Space Center Blvd.
	PHOTO OPPORTUNITY: Students will learn how a space suit works and how astronauts assemble it and put it on in space.	
12:00 p.m.	Students return to schools	

## QUICK FACTS

### MATH AND SCIENCE EDUCATION IN THE U.S. TODAY

- U.S. students take fewer science and math courses in high school compared to students in other industrialized nations and score lower on standardized tests.
  - How U.S. 12th graders compare:

Physics	9th place
Chemistry	11th place
Biology	13th place
Geometry	11th place
Algebra	12th place
Calculus	13th place
- The number of college graduates in science and engineering fields has dropped nearly 50 percent since 1970.
- The number of college freshmen enrolled in science and engineering courses has dropped 14 percent in the past four years alone.
- In the year 2000, there will be a shortage of 650,000 engineers in the U.S.
- By the end of this decade, more than two-thirds of new entrants into the labor force will be women and minority men. Less than 20 percent will be white men, the group that traditionally has provided most engineers.
- Blacks receive less than three percent of all engineering degrees awarded. Hispanics earn even fewer: only two percent. Women make up less than three percent of all working engineers in the U.S.
- If the U.S. economy is to remain healthy and competitive, we must work harder to convince women and minorities to stay in school, study math and science, and earn degrees in science and engineering.
- Space exploration sparks students' interest in studying math and science. Enrollment in college science and engineering courses soared during the late 1960s and early 1970s, when NASA astronauts were exploring the moon's surface.

Source: International Association for Evaluation of Education Achievement, National Science Teachers Association, and the National Society of Professional Engineers.

# NASA News

National Aeronautics and  
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Lyndon B. Johnson Space Center  
Houston, Texas 77058  
AC 713 483-5111

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For Release

Kari Fluegel  
RELEASE NO. 92-025

May 12, 1992  
For Immediate Release

## MEDIA ADVISORY

Due to illness, one of the four aquanauts in the "La Chalupa 30" undersea investigation was withdrawn from the mission. The aquanaut developed flu-like symptoms and was brought to the surface. He was then checked by physicians and released. The La Chalupa experiment will continue with the three remaining aquanauts.

# NASA News

National Aeronautics and  
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Lyndon B. Johnson Space Center  
Houston, Texas 77058  
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For Release

Barbara Schwartz  
RELEASE NO. 92-026

May 19, 1992

## STS-50 U.S. MICROGRAVITY LABORATORY (USML-1) BRIEFINGS SET

USML-1 is a complement of microgravity materials processing technology experiments to be flown on the first Extended Duration Orbiter (EDO) mission aboard Columbia scheduled for launch in June 1992. This 13-day flight will be the longest Space Shuttle mission to date.

The preflight briefings will be held on Tuesday, May 26, 1992, beginning with a mission overview at 8:30 a.m. CDT by lead Flight Director <sup>Col. CASTLE</sup> ~~Wayne Hale~~ at the Johnson Space Center (JSC), Houston, and Mission Manager Charles Sprinkle at the Marshall Space Flight Center (MSFC), Huntsville, Ala.

A series of mission science presentations from MSFC will begin at 9:30 a.m. CDT, led by USML-1 Program Scientist Dr. Roger Crouch and USML-1 Mission Scientist Dr. Don Frazier. At 11 a.m. CDT, JSC's Chief of the Medical Sciences Division, Dr. Sam Pool, will discuss EDO medical issues.

The astronaut crew will brief from JSC at 1:30 p.m. CDT and will be available for round-robin interviews after the press conference. News media representatives wishing to participate in the one-on-one interviews should notify the JSC newsroom, 713/483-5111, by 12 noon CDT, May 22, 1992.

Only the briefings will be carried on NASA Select television with two-way audio for questions from NASA Headquarters and other centers. NASA Select programming is carried on Satcom F2R, transponder 13, located at 72 degrees west longitude.

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# NASA News

National Aeronautics and  
Space Administration

Lyndon B. Johnson Space Center  
Houston, Texas 77058  
AC 713 483-5111

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For Release

Barbara Schwartz  
RELEASE NO. 92-027

May 19, 1992  
FOR IMMEDIATE RELEASE

## ASTRONAUT MELNICK TO RETIRE AND LEAVE NASA

Astronaut Bruce E. Melnick (Commander, USCG) is retiring from the U.S. Coast Guard and will be leaving NASA in July. Melnick has accepted the position of Director, Shuttle Processing Contract Process Improvement Technology with Lockheed Space Operations Co. (LSOC) at Kennedy Space Center (KSC), Fla.

"I am really honored to have been a part of the NASA team for the last 5 years and certainly will miss the close friends I have made in the Johnson Space Center family. My two opportunities to venture into space will provide me with irreplaceable memories for the rest of my life and should bring an invaluable experience base into my new position with LSOC at KSC. I am looking forward to taking on the challenges of space engineering management and family wise, this is an ideal time for us to make the move," Melnick said. He will be involved in the day-to-day processing of Space Shuttle vehicles in his new position.

Melnick flew on Space Shuttle missions STS-41 in October 1990 to deploy the Ulysses Jupiter probe and STS-49 in May 1992 to retrieve, repair and reboost the Intelsat-VI telecommunications satellite. Selected by NASA in June 1987, Melnick was NASA's first U.S. Coast Guard astronaut.

Regarding Melnick's decision to retire, Director of Flight Crew Operations Donald R. Puddy said, "Bruce has been an asset to the program, not only in his flight assignments but also in his technical assignments. He has represented the Astronaut Office at KSC in preparing the Shuttle orbiters' cockpit and middeck for missions and in assembly and checkout of the new Space Shuttle Endeavour at contractor facilities in California. We wish him the best in his new job. His background will be very beneficial to NASA in his new position."

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# NASA News

National Aeronautics and  
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**Lyndon B. Johnson Space Center**  
Houston, Texas 77058  
AC 713 483-5111

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For Release:

May 21, 1992

Barbara Schwartz  
RELEASE NO. 92-028

## STS-49 POSTFLIGHT CREW PRESS CONFERENCE

The STS-49 postflight crew press conference will be held at the Johnson Space Center, building 2, room 135, Friday, May 29, 1992, at 9 a.m. CDT. Crew members will narrate slides and film from their recent Intelsat-VI retrieval, repair and reboost mission, followed by a question and answer session.

News media are invited to participate on location at JSC or by two-way audio from NASA Headquarters and other centers. The briefing will be carried on NASA Select television, Satcom F2R, transponder 13, located at 72 degrees west longitude.

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# NASA News

National Aeronautics and  
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Lyndon B. Johnson Space Center  
Houston, Texas 77058  
AC 713 483-5111

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For Release

Jeffrey Carr/Barbara Schwartz  
(Phone: 713-483-5111)

May 29, 1992

RELEASE: 92-29

## ASTRONAUT BUCHLI TO RETIRE AND LEAVE NASA

Astronaut James F. Buchli (Col., USMC) will retire from the U.S. Marine Corps and leave NASA in August to accept the position of Manager, Station Systems Operations and Requirements with Boeing Defense and Space Group, Huntsville, Ala.

Buchli is a veteran of four Space Shuttle missions: STS-51C, a Department of Defense flight in January 1985; STS-61A, the West German Spacelab D 1 mission in November 1985; STS-29, a mission to deploy a Tracking and Data Relay Satellite, in March 1989; and STS-48 in September 1991 on which the Upper Atmosphere Research Satellite (UARS) as deployed.

Buchli also has served as Deputy Chief of the Astronaut Office since March 1989. Since becoming an astronaut in August 1979, Buchli has held a number of technical assignments, including spacecraft communicator in Mission Control and in the Astronaut Office Operations Development Branch working on controls and displays for the Shuttle and Space Station Freedom.

"I'm grateful for my years of active service as a Marine and as part of the NASA team. It has allowed me to be a part of two of the finest organizations in the world. I'm looking forward to changing career directions and remaining involved with the outstanding people who make up our space team," Buchli said.

"Jim has made significant contributions to the Astronaut Office and to the space flight program during his tenure here. We'll miss him and wish him continued success. His experience on four Space Shuttle flights and his managerial abilities will be assets to Boeing in their Space Station Freedom efforts," Donald R. Puddy, Director of Flight Crew Operations, said.

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# NASA News

National Aeronautics and  
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Lyndon B. Johnson Space Center  
Houston, Texas 77058  
AC 713 483-5111

For Release

Kari Fluegel  
(Phone: 713-483-5111)

May 30, 1992  
EMBARGOED UNTIL 10:30 a.m. CDT

RELEASE: 92-30

## DNA FINGERPRINTING USED TO TRACK MICROBES IN SPACE

Advanced techniques used to place criminals at crime scenes now are being employed in NASA's continuing investigation of microbial activity in the weightless environment of orbiting spacecraft.

Since the Apollo program, medical researchers have investigated the possibility of microbial cross-contamination between astronauts confined to a spacecraft. The advent of recent methods such as DNA fingerprinting, which studies organisms at the molecular level, has allowed scientists to track the transfer of a specific microbe within the environment of the Space Shuttle orbiter, according to a joint study by NASA's Johnson Space Center (JSC), Krug Life Sciences, Houston and the University of Texas Medical School.

Results of the study, "Staphylococcus aureus on Earth and in Space," are being presented this week at the annual American Society for Microbiology meeting in New Orleans.

Staphylococcus aureus was chosen as the target organism for the development of the tracking method because it is a common microbe carried in the throat and nasal cavity of about 20-40 percent of normal, healthy humans. It is easily transferred to the air and other surfaces through actions as simple as sneezing.

Though the grape-like clusters of most Staphylococcus aureus colonies look identical, the DNA molecules within the microbe are unique and may allow a microbe to be traced to its original carrier. This technique is analogous to the use of DNA from a tissue or blood sample found at a crime scene to identify a criminal.

"We're exploiting the uniqueness of the individual at the most basic level," said Duane L. Pierson of JSC's Biomedical Research and Research Branch.

- more -

- 2 -

On a recent Shuttle mission, *Staphylococcus aureus* was isolated among several crew members during the microbial sampling portion of the routine pre- and post-flight physicals. Microbe samples also were collected from Shuttle surfaces including air vents, the galley and middeck lockers before, during and after the mission. DNA from the samples was extracted, cut into smaller fragments and analyzed using Pulsed Field Gel Electrophoresis which separates the fragments and generates a pattern unique to the organism in the sample.

Investigators did not detect any transfer of the organism between the crew members during the flight, however, *Staphylococcus aureus* isolated in samples from the crew compartment was used to trace the specific microbes to their originators. The analysis also showed that the space flight did not alter the DNA profile of the *Staphylococcus aureus* strains.

DNA fingerprinting has been used by crime investigators since the late 1980s, but the team's study was the first use of the technique in the space program. Such use could allow more extensive research into the microbial environment of space vehicles.

"This technique also has the potential to be another tool that would complement existing technology in forensic analysis," said George Weinstock, University of Texas Medical School.

Other investigators were Monjula Chidambaram and Joe Don Heath, University of Texas Medical School; Baldev Sharma, Houston Police Crime Lab; Laura Mallary and S. K. Mishra, Krug Life Sciences, Houston.

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# NASA News

National Aeronautics and  
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Lyndon B. Johnson Space Center  
Houston, Texas 77058  
AC 713 483-5111

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For Release

Jeffrey Carr  
RELEASE NO. 92-31

June 2, 1992

## STS-46 PREFLIGHT BRIEFINGS SET

A series of press briefings on Space Shuttle mission STS-46, set for launch July 16, will be held on Thursday, June 11, from 8 a.m. to 4 p.m. CDT at the Johnson Space Center, Houston.

STS-46 will feature the deployment of the European Space Agency's (ESA) European Retrieval Carrier (EURECA) - a free-flying experiment and processing platform - on the second day of the flight. The mission will also include the first flight of the NASA/Italian Space Agency's (ASI) Tethered Satellite System (TSS) - a unique Shuttle-borne experiment facility designed to deploy, maintain at a distance and retrieve scientific payloads using a conductive tether. The week-long mission aboard the Space Shuttle Atlantis will be manned by a multinational crew representing NASA, ESA and the ASI.

The briefings will be carried on NASA Select television (Satcom F2R, transponder 13, 72 degrees west longitude). An extended crew press conference will be held in lieu of round robin interviews. Two-way Q&A will be available at NASA Headquarters and major field centers.

In addition, a roundtable discussion with key representatives of the TSS mission and news media at Johnson will focus on the unique challenges of preparing to conduct these investigations in orbit. This discussion will also be carried on NASA Select television.

- more -

- 2 -

The briefing schedule follows:

(all times CDT)

8 a.m.	Mission Summary Briefing
8:45 a.m.	EURECA Background Briefing
9:30 a.m.	TSS Background Briefing
10:15 a.m.	TSS Operations and Science Briefing
11:30 p.m.	Flight Crew Press Conference
1 p.m.	Lunch Break
2:30 p.m.	TSS Roundtable Discussion

- end -

# NASA News

National Aeronautics and  
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Lyndon B. Johnson Space Center  
Houston, Texas 77058  
AC 713 483-5111

For Release:

Jeffrey Carr  
RELEASE NO. 92-032

June 9, 1992

## UPDATE ON STS-46 PREFLIGHT BRIEFINGS

STS-46 pre-flight briefings to be held on Thursday, June 11, from 8 a.m. to 4 p.m. CDT, will originate from both the Johnson Space Center and the Kennedy Space Center, Fla.

Due to scheduling conflicts, the planned roundtable discussion on the unique challenges of the tether mission will not take place as scheduled but will be rescheduled for a later date.

The briefings will be carried on NASA Select television (Satcom F2R, transponder 13, 72 degrees west longitude). An extended crew press conference will be held in lieu of round robin interviews. Two-way Q&A will be available at NASA Headquarters and major field centers.

The briefing schedule follows:  
(all times CDT)

8:00 a.m. - 8:45 a.m.	Mission Summary Briefing
8:45 a.m. - 9:30 a.m.	EURECA Background Briefing
9:30 a.m. - 10:45 a.m.	TSS Background Briefing
10:45 a.m. - 12 noon	TSS Operations and Science Briefing
12 noon	(STS-46 Briefings interrupted for Galileo briefing from JPL)
1:30 p.m. - 3:00 p.m.	Flight Crew Press Conference

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# NASA NEWS

National Aeronautics and  
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Lyndon B. Johnson Space Center  
Houston, Texas 77058  
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For Release

June 12, 1992

James Hartsfield  
RELEASE NO. 92-033

## NESBITT NAMED CHIEF OF PUBLIC SERVICES

Stephen A. Nesbitt has been named chief of the Johnson Space Center's Public Services Branch, Office of Public Affairs, succeeding Charles A. Biggs, who retired April 3.

Nesbitt's appointment is effective June 14. He currently is deputy chief of the Media Services Branch and has been employed at JSC for 14 years.

The Public Services Branch oversees visitor services, public correspondence, on-site and traveling exhibits and Freedom of Information Act requests. The branch also is responsible for the speaker's bureau, educational activities, community relations, and the production of public literature concerning the center's facilities, personnel and programs.

Nesbitt received a bachelor of arts degree in history from the University of Texas, Austin, in 1973, and a master of public administration degree from Angelo State University, San Angelo, Texas, in 1978. He worked as a reporter for the San Angelo Standard-Times for two years and as an information writer for the Angelo State University Public Relations Department for two years prior to joining JSC as a Presidential Management Intern.

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# NASA News

National Aeronautics and  
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For Release

Jeffrey Carr  
Release No. 92-034

June 22, 1992

## FLIGHT CONTROL OF STS-50

Flight control for STS-50, the 12th voyage of Columbia and the longest flight ever for a Space Shuttle, will follow the procedures and traditions common to U.S. manned space flights since 1965, when the Mission Control Center was first used.

Responsibility for conduct of flight operations will revert to the Mission Control Center (MCC) in Houston once Columbia's two solid rocket boosters ignite. Mission support in the MCC will begin five hours prior to launch and continue through landing.

The primary objective of mission STS-50 is to conduct over thirty experiments ranging from crystal manufacturing to studies in fluid dynamics as part of the United States Microgravity Laboratory (USML-1). After being cleared for orbital operations, and following Spacelab systems activation, USML payload operations will be managed from the Payload Operations Control Center, or POCC, at the Marshall Space Flight Center in Huntsville, Alabama.

Orbiter flight operations will be conducted from Flight Control Room One (FCR-1) on the second floor of the MCC located in Bldg. 30 at the Johnson Space Center. The teams of flight controllers will alternate shifts in the control center and in nearby analysis and support facilities. The handover between each team takes about an hour and allows each flight controller to brief his or her replacement on developments during the previous two shifts.

The flight control teams for this mission will be referred to as the Ascent/Entry, Orbit 1, Orbit 2, Orbit 3, and Orbit 4 teams. The ascent and entry phases will be conducted by flight director Jeffrey W. Bantle. The Orbit 1 team will be headed by Richard D. Jackson. The Orbit 2 team, will be directed by lead flight director Robert E. Castle, Jr. The Orbit 3 team will be led by Gary E. Coen, and the Orbit 4 team by Robert M. Kelso.

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## MCC POSITIONS AND CALL SIGNS FOR STS-50

The flight control positions in the MCC, and their responsibilities, are:

### Flight Director (FLIGHT)

Has overall responsibility for the conduct of the mission.

### Spacecraft Communicator (CAPCOM)

By tradition an astronaut; responsible for all voice contact with the flight crew.

### Flight Activities Officer (FAO)

Responsible for procedures and crew timelines; provides expertise on flight documentation and checklists; prepares messages and maintains all teleprinter and/or Text and Graphics System traffic to the vehicle.

### Integrated Communications Officer (INCO)

Responsible for all Orbiter data, voice and video communications systems; monitors the telemetry link between the vehicle and the ground; oversees the uplink command and control processes.

### Flight Dynamics Officer (FDO)

Responsible for monitoring vehicle performance during the powered flight phase and assessing abort modes; calculating orbital maneuvers and resulting trajectories; and monitoring vehicle flight profile and energy levels during reentry.

### Trajectory Officer (TRAJECTORY)

Also known as "TRAJ," this operator aids the FDO during dynamic flight phases and is responsible for maintaining the trajectory processors in the MCC and for trajectory inputs made to the Mission Operations Computer.

### Guidance, Navigation & Control Systems Engineer (GNC)

Responsible for all inertial navigational systems hardware such as star trackers, radar altimeters and the inertial measurement units; monitors radio navigation and digital autopilot hardware systems.

### Guidance & Procedures Officer (GPO)

Responsible for the onboard navigation software and for maintenance of the Orbiter's navigation state, known as the state vector. Also responsible for monitoring crew vehicle control during ascent, entry, or rendezvous.

#### Rendezvous Guidance and Procedures Officer (RENDEZVOUS)

The RENDEZVOUS GPO is specialist who monitors onboard navigation of the Orbiter during rendezvous and proximity operations. The UARS deploy maneuver involves an active separation, using rendezvous radar to verify separation rates, requiring the support of this specialist.

#### Environmental Engineer & Consumables Manager (EECOM)

Responsible for all life support systems, cabin pressure, thermal control and supply and waste water management; manages consumables such as oxygen and hydrogen.

#### Electrical Generation and Illumination Officer (EGIL)

Responsible for power management, fuel cell operation, vehicle lighting and the master caution and warning system.

#### Payloads Officer (PAYLOADS)

Coordinates all payload activities; serves as principal interface with remote payload operations facilities.

#### Data Processing Systems Engineer (DPS)

Responsible for all onboard mass memory and data processing hardware; monitors primary and backup flight software systems; manages operating routines and multi-computer configurations.

#### Propulsion Engineer (PROP)

Manages the reaction control and orbital maneuvering thrusters during all phases of flight; monitors fuel usage and storage tank status; calculates optimal sequences for thruster firings.

#### Booster Systems Engineer (BOOSTER)

Monitors main engine and solid rocket booster performance during ascent phase.

#### Ground Controller (GC)

Coordinates operation of ground stations and other elements of worldwide space tracking and data network; responsible for MCC computer support and displays.

#### Maintenance, Mechanical, Arm & Crew Systems (MMACS)

Formerly known as RMU; responsible for remote manipulator system; monitors auxiliary power units and hydraulic systems; manages payload bay and vent door operations.

### Extravehicular Activities (EVA)

A specialist responsible for monitoring and coordinating preparations for and execution of space walks. Responsibilities include monitoring suit and EVA hardware performance.

### Payload Data & Retrieval System (PDRS)

A specialist responsible for monitoring and coordinating the operation of the remote manipulator system.

### Flight Surgeon (SURGEON)

Monitors health of flight crew; provides procedures and guidance on all health-related matters.

### Public Affairs Officer (PAO)

Provides real-time explanation of mission events during all phases of flight.

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## STS-50 FLIGHT CONTROL TEAM STAFFING

<u>POSITION</u>	<u>ASCENT/ENTRY</u>	<u>ORBIT 1</u>	<u>ORBIT 2</u>	<u>ORBIT 3</u>	<u>ORBIT 4</u>
FLIGHT	Jeff Bantle	Richard Jackson	Robert Castle	Gary Coen	Rob Kelso
CAPCOM	Sid Gutierrez (A) Ken Reightler (E) Jim Halsell (A/E)	Jeff Wisoff	Rhea Seddon	Sam Gemar	Jim Halsell Bill McArthur
FAO	Gail Schneider	Gail Schneider	Mary Anne Plaza	Tracy Calhoun	Greg Smith
INCO	Harry Black	Harry Black	Chris Counts	Roberto Moolchan	Jay Conner
FDO	Ed Gonzalez (A) Doug Rask (E)	Phil Burley	Steve Stich	Dick Thies	Tim Brown
TRAJ	Matt Abbot (A) Brian Perry (E)	Don Pearson	Dan Adamo	Roger Balettie	Mark Riggio
GPO	Dennis Bentley (A) Ken Patterson (E)				
GNC	John Shannon	John Shannon	Charles Alford	Frank Trlica	Phillip Perkins
EECOM	Quinn Carelock	Quinn Carelock	Dan Molina	Leonard Riche	Pete Cerna

EGIL	Ray Miessler	Ray Miessler	Brian Anderson	Robert Armstrong	Ben Pawlik
PAYLOADS	Annette Hasbrook	Annette Hasbrook	Mark Kirasich	Sharon Conover	Joe Cavallaro
DPS	Terry Keeler	Terry Keeler	Gloria Araiza	Gary Sham	Mark Erminger
PROP	Matthew Barry	Matthew Barry	Lonnie Schmitt	Tony Ceccacci	Karen Jackson
BOOSTER	Franklin Markle (A) Michael Dingler (E)	N/A	N/A	N/A	N/A
GC	Chuck Capps Larry Foy	Henry Allen Terry Quick	Lynn Vernon Frank Stolarski	Melissa Blizzard Dennis Williams	
EVA	N/A	N/A	N/A	N/A	N/A
PDRS	N/A	N/A	N/A	N/A	N/A
MMACS	Bill Anderson	Bill Anderson	H. Karl Pohl	Alan Simon	Kevin McCluney
SURGEON	Phil Stepaniak (A/E)	Roy Marsh Denise Baisden	Brad Beck Richard Jennings	Denise Baisden Brad Beck	
PAO	James Hartsfield (A) Kyle Herring (E)	James Hartsfield Kyle Herring	Kari Fluegel Jeff Carr	Kelly Humphries Billie Deason	

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# NASA News

National Aeronautics and  
Space Administration

Lyndon B. Johnson Space Center  
Houston, Texas 77058  
AC 713 483-5111

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For Release:

Barbara Schwartz  
RELEASE NO. 92-035

June 25, 1992

## ASTRONAUT CREIGHTON TO RETIRE AND LEAVE NASA

Astronaut John O. Creighton (Capt., USN) will retire from the U.S. Navy and leave NASA on July 15 to work in the Commercial Airplane Group of the Boeing Co., Seattle, Wash., beginning Sept. 1. He will work as a production test pilot and as an instructor pilot in the customer support area.

Creighton, who was selected for the astronaut program in 1978, is a veteran of three Space Shuttle missions. He piloted STS-51G, in June 1985, on which communications satellites were deployed for Mexico (Morelos), the Arab League (Arabsat) and the United States (AT&T Telstar). He was commander of Department of Defense flight STS-36, launched Feb. 28, 1990. He also commanded STS-48 in September 1991, on which the Upper Atmosphere Research Satellite was deployed.

"I have thoroughly enjoyed my time at NASA, especially working with the outstanding people here. I feel privileged to have flown on three Shuttle missions--each unique and rewarding, but then comes a point when it's time to look for a new and different challenge. I am looking forward to returning to Seattle, where I grew up, and to beginning my new career at Boeing," Creighton said.

"Our loss is Boeing's gain," said Donald R. Puddy, Director of Flight Crew Operations. "They're getting a terrific pilot and a seasoned aerospace pioneer. We will miss him, but wish him continuing success as he pursues his new career."

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# NASA News

National Aeronautics and  
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Lyndon B. Johnson Space Center  
Houston, Texas 77058  
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For Release

Barbara Schwartz  
RELEASE NO. 92-036

June 26, 1992

## NASA ADMINISTRATOR GOLDIN PRESENTS NEW "WORLD CLASS" AWARDS

NASA Administrator Daniel S. Goldin will present the first NASA Award for "World Class" Performance to two contractors today in Johnson Space Center's Teague Auditorium at 2 p.m. CDT.

The award will be given to Space Systems Division of Rockwell International of Downey, CA, for delivering the new orbiter Endeavour on time and below cost and to Lockheed Space Operations Company of Titusville, FL, for outstanding work on orbiter processing for Space Shuttle missions.

Robert G. Minor, President of Space Systems Division, Rockwell, and Gerald T. Oppliger, President of Lockheed Space Operations Company will accept the awards on behalf of their companies.

The new award is given by NASA when the Administrator determines that an organization has performed world class work of significant benefit to the agency and the taxpayer. Recipients of the award should be models of excellence for other organizations. The award may be earned by a contractor, university, NASA Center, or other Government activity performing work of vital importance to the agency.

NASA Honor Awards will be given to the STS-42, STS-44, STS-45, and STS-49 astronaut crews at the same ceremony. The Intelsat EVA Recovery Team also will be recognized for their outstanding work during the STS-49 mission.

News media are welcome to attend the ceremony.

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# NASA News

National Aeronautics and  
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Lyndon B. Johnson Space Center  
Houston, Texas 77058  
AC 713 483-5111

For Release

June 30, 1992

Del Harding  
Ames Research Center, Moffett Field, Calif.  
(Phone: 415-604-9000)

Barbara Schwartz  
Johnson Space Center, Houston, Tex.  
(Phone: 713-483-5111)

RELEASE NO. 92-037

## HAWLEY TO RETURN TO JOHNSON SPACE CENTER

Dr. Steven A. Hawley, associate director of NASA's Ames Research Center since 1990, will return to Johnson Space Center Aug. 1 as deputy director of flight crew operations directorate (FCOD).

"This is a unique opportunity to return 'home' and play a part in running my old organization," Hawley said. "I have enjoyed my two years at Ames and seeing a unique part of the agency. I will miss the Ames people very much."

Prior to being named Ames' associate director in June 1990, Hawley was deputy chief of the astronaut office at JSC and served as an astronaut from 1978-1990.

Hawley, 40, flew on three space shuttle missions, logging 412 hours in space. Hawley's hometown is Salina, Kan. He is an honors graduate of the University of Kansas and received his doctorate in astronomy and astrophysics from the University of California at Santa Cruz in 1977. He is a member of the American Astronomical Society, the Astronomical Society of the Pacific, Sigma Pi Sigma and Phi Beta Kappa. In 1988, he was awarded the NASA Exceptional Service Medal. Hawley is married to the former Eileen M. Keegan of Redondo Beach, Calif.

"Steve's an outstanding manager, and I look forward to his return to JSC. His experience makes him well qualified to help lead the flight crew operations functions, which include recommending astronaut selections; aviation operations; payload specialist activities, both domestic and international; and operational contributions to design and development of manned spacecraft and payloads, equipment, and systems," Donald R. Puddy, director of FCOD, said.

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# NASA News

National Aeronautics and  
Space Administration

Lyndon B. Johnson Space Center  
Houston, Texas 77058  
AC 713 483-5111

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For Release  
July 1, 1992

Barbara Schwartz  
RELEASE NO. 92-038

## CHIEF ASTRONAUT TO RETIRE FROM NAVY AND LEAVE NASA

Capt. Daniel C. Brandenstein, chief of the astronaut office since 1986 and veteran of four Space Shuttle missions, is retiring from the U.S. Navy and leaving NASA about Oct. 1 to pursue other interests.

Brandenstein commanded and flew the new orbiter Endeavour on the recent STS-49 mission to retrieve, repair, and deploy the stranded INTELSAT-VI telecommunications satellite. During this mission, the crew conducted a record-setting four EVA's (extravehicular activity or spacewalks) to successfully rescue the satellite and to demonstrate and evaluate numerous EVA tasks to be used for the assembly of Space Station Freedom.

Selected by NASA in January 1978, Brandenstein first flew as a pilot on STS-8, the first night launch and landing in Aug.-Sept. 1983, aboard the Challenger. During the mission, crew members deployed the Indian National Satellite (INSAT-1B), operated the Canadian-built remote manipulator system (RMS) with the payload flight test article, operated the continuous flow electrophoresis system with live cell samples, conducted medical measurements to understand biophysiological effects of space flight, and activated earth resources and space science experiments.

On his second mission in June 1985, Brandenstein commanded the crew of STS-51G aboard Discovery to deploy communications satellites for Mexico (Morelos), the Arab League (Arabsat), and the United States (AT&T Telstar). Also, the RMS was used to deploy and retrieve the SPARTAN satellite after a rendezvous procedure by Brandenstein. In addition, the crew conducted a number of astronomy, materials processing, biomedical, and other experiments.

Brandenstein also commanded the crew of STS-32 in Jan. 1990 aboard Columbia to deploy the Syncom IV-F5 satellite and retrieve the Long Duration Exposure Facility using the RMS. The crew also operated a variety of life sciences and earth sciences experiments. The IMAX camera was flown on this mission and the film incorporated into "The Blue Planet" about the Earth's environment.

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With 789 hours in space, Brandenstein holds the record among Space Shuttle astronauts. He also has flown four of the five orbiters, and he has more rendezvous experience than any other pilot.

During his career, Brandenstein has earned a number of achievement awards, including the NASA Distinguished Service Medals, the Defense Superior Service Medal, the Distinguished Flying Cross, NASA Outstanding Leadership Medals, Legion of Honor (France), Medal of King Abdul Aziz (Saudi Arabia), and numerous other awards and honors.

"For the past 14 years I have had the opportunity to have the most challenging and interesting job in the world. It has been exciting, rewarding, and a pleasure to work with the many talented and motivated people who make up this country's space team. Although I have chosen to change careers, I will always be an avid supporter of the space efforts which I feel are essential to the advancement of knowledge and technology in this country," Brandenstein said.

"I'm sorry to see Dan go. He's one of the finest human beings I have ever had the privilege to know. He has been an outstanding astronaut, providing an example of excellence to which all others should aspire. His leadership skills are unparalleled here or elsewhere. I wish him the best in whatever he chooses to do," center director Aaron Cohen said.

Donald R. Puddy, director of flight crew operations added, "Dan's experience and expertise certainly will be missed. His many extraordinary achievements as an astronaut and exemplary performance as a manager have provided the leadership that has been very valuable to the astronaut corps, the Johnson Space Center, and NASA. I wish him continuing success as he pursues a new career."

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# NASA News

National Aeronautics and  
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**Lyndon B. Johnson Space Center**  
Houston, Texas 77058  
AC 713 483-5111

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For Release:

July 14, 1992

Barbara Schwartz  
RELEASE NO. 92-039

## STS-50 POSTFLIGHT BRIEFINGS SET FOR JULY 20

The STS-50 U.S. Microgravity Laboratory postflight crew press conference will be held Monday, July 20, from 1-3 p.m. CDT at the Johnson Space Center, Houston, in building 2, room 135. The crew members will describe their record-setting 14-day flight while narrating film highlights of the mission.

The conference will be carried on NASA Select television with two-way audio for questions and answers from NASA Headquarters and other centers. NASA Select programming is carried on Satcom F2R, transponder 13, located at 72 degrees west longitude.

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# NASA News

National Aeronautics and  
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Lyndon B. Johnson Space Center  
Houston, Texas 77058  
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For Release

Kari Fluegel  
Release No. 92-040

July 15, 1992

## EMERGENCY RESCUE TEAMS TEST PREPAREDNESS IN SIMULATION

The collective emergency preparedness of the Johnson Space Center, the City of Houston and the Air National Guard will be put to the test Thursday, July 16, 1992, at Ellington Field during a simulated aircraft mishap.

The exercise will focus on a simulated accident occurring during routine Gulfstream 2 maintenance operations. A total of six individuals will require medical care resulting from an engine explosion and fire and subsequent rescue operations.

Such simulations are performed periodically to evaluate the network responsible for dealing with such emergencies. In January 1991, the last such test, rescue workers responded to a simulated KC-135 accident.

"The main purpose of the JSC mishap simulation is to bring all the essential personnel together to gain a better understanding of each person's role in the event of an actual mishap and to be familiar with JSC mishap plans, policies and procedures," said Dr. Phil Stepaniak, of JSC's Medical Operations Branch.

Coordinators for the exercise are Stepaniak and John Starnes, ground safety officer in the Aviation Safety Office. Other JSC participants will represent aviation safety and operations, safety, security, public affairs and medical operations. The City of Houston will support the exercise with the Ellington Fire and Crash and Rescue teams, security, air traffic control and ambulance service. The Air National Guard will assist in safing the area.

NOTE TO EDITORS: Members of the media wishing to observe the simulation should contact the Johnson Space Center Newsroom. In keeping with the tone of the simulation, the area will be sealed once the test begins. All media representatives should be in place no later than 9 a.m.

- end -

# NASA News

National Aeronautics and  
Space Administration

Lyndon B. Johnson Space Center  
Houston, Texas 77058  
AC 713 483-5111

For Release

Barbara Schwartz  
RELEASE NO. 92-041

July 21, 1992

## ASTRONAUT HILMERS LEAVES NASA TO STUDY MEDICINE

Astronaut David C. Hilmers (Col., USMC) is leaving NASA in the fall and retiring from the U.S. Marine Corps November 1 to pursue a medical degree. Hilmers will attend the Baylor College of Medicine in Houston.

Hilmers has flown on four Space Shuttle missions, logging more than 493 hours in space. In September 1988, he served as a mission specialist on STS-26, the first flight to be flown after the Challenger accident, which deployed a Tracking and Data Relay Satellite.

More recently, Hilmers was a crew member on the STS-42 International Microgravity Laboratory-1 mission in January 1992, working on experiments in a broad spectrum of scientific disciplines provided by investigators from 11 countries. Two of the missions, STS-51J in October 1985 and STS-36 in February 1990, were Department of Defense flights.

Selected as an astronaut in 1980, Hilmers has served in a number of technical assignments, including work on upper stage vehicles, Shuttle software verification, astronaut office training coordinator, spacecraft communicator (CAPCOM), Space Station Freedom issues and Head of the Mission Development Branch within the Astronaut Office.

"As I leave NASA, I reflect on 12 years filled with grand experiences, great joy and occasional sorrow. Above all else, I will miss my co-workers in the space program who stood by me throughout, and whose efforts were responsible for anything I might have achieved. At this time, I feel that I have been assigned to a new mission in the field of medicine, and my hope is that my service to others would someday approach the support I have enjoyed here," Hilmers said.

- 2 -

"Dave is a brilliant and totally unselfish person. I'm sure he will be successful in his new career as a doctor. His aspiration to new goals typifies the intrinsic striving to explore new horizons and to accept new challenges that made him an outstanding astronaut and an asset to the space program," Donald R. Puddy, Director of Flight Crew Operations, said.

- end -

# NASA News

National Aeronautics and  
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Lyndon B. Johnson Space Center  
Houston, Texas 77058  
AC 713 483-5111

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For Release

July 23, 1992

Jeffrey Carr  
Release No. 92-142

## FLIGHT CONTROL OF STS-46

Flight control for STS-46, the 12th voyage of Atlantis will follow the procedures and traditions common to U.S. manned space flights since 1965, when the Mission Control Center was first used.

Responsibility for conduct of flight operations will revert to the Mission Control Center (MCC) in Houston once Atlantis's two solid rocket boosters ignite. Mission support in the MCC will begin five hours prior to launch and continue through landing.

The primary objectives of mission STS-46 are to deploy the European Retrievable Carrier (EURECA) and to demonstrate the Tethered Satellite System (TSS). The EURECA will be deployed the day after launch, on orbit 12, after which checkout of the TSS subsystems will begin in preparation for deployment of the satellite on flight day four. TSS deployed operations are scheduled over two full days.

Orbiter and payload operations will be conducted from Flight Control Room One (FCR-1) on the second floor of the MCC located in Bldg. 30 at the Johnson Space Center. The teams of flight controllers will alternate shifts in the control center and in nearby analysis and support facilities. The handover between each team takes about an hour and allows each flight controller to brief his or her replacement on developments during the previous two shifts. The Science Operations Center, located in the MCC, will be manned by the TSS science operations team led by a Science Operations Director (SOD) on alternating shifts. The SOD will be responsible for coordinating the operation of TSS science support systems and experiments during in-bay and deployed operations.

The flight control teams for this mission will be referred to as the Ascent/Entry, Orbit 1, Orbit 2, and Orbit 3 teams. The ascent and entry phases will be conducted by flight director Ron Dittimore. The Orbit 1 team will also be directed by Dittimore. The Orbit 2 team will be headed by lead flight director Chuck Shaw. The Orbit 3 team will be led by Phil Engelauf.

###

MCC POSITIONS AND CALL SIGNS FOR STS-46

The flight control positions in the MCC, and their responsibilities, are:

**Flight Director (FLIGHT)**

Has overall responsibility for the conduct of the mission.

**Spacecraft Communicator (CAPCOM)**

By tradition an astronaut; responsible for all voice contact with the flight crew.

**Flight Activities Officer (FAO)**

Responsible for procedures and crew timelines; provides expertise on flight documentation and checklists; prepares messages and maintains all teleprinter and/or Text and Graphics System traffic to the vehicle.

**Integrated Communications Officer (INCO)**

Responsible for all Orbiter data, voice and video communications systems; monitors the telemetry link between the vehicle and the ground; oversees the uplink command and control processes.

**Flight Dynamics Officer (FDO)**

Responsible for monitoring vehicle performance during the powered flight phase and assessing abort modes; calculating orbital maneuvers and resulting trajectories; and monitoring vehicle flight profile and energy levels during reentry.

**Trajectory Officer (TRAJECTORY)**

Also known as "TRAJ," this operator aids the FDO during dynamic flight phases and is responsible for maintaining the trajectory processors in the MCC and for trajectory inputs made to the Mission Operations Computer.

**Guidance, Navigation & Control Systems Engineer (GNC)**

Responsible for all inertial navigational systems hardware such as star trackers, radar altimeters and the inertial measurement units; monitors radio navigation and digital autopilot hardware systems.

**Guidance & Procedures Officer (GPO)**

Responsible for the onboard navigation software and for maintenance of the Orbiter's navigation state, known as the state vector. Also responsible for monitoring crew vehicle control during ascent, entry, or rendezvous.

**Rendezvous Guidance and Procedures Officer (RENDEZVOUS)**

The RENDEZVOUS GPO is specialist who monitors onboard navigation of the Orbiter during rendezvous and proximity operations. The UARS deploy maneuver involves an active separation, using rendezvous radar to verify separation rates, requiring the support of this specialist

**Environmental Engineer & Consumables Manager (EECOM)**

Responsible for all life support systems, cabin pressure, thermal control and supply and waste water management; manages consumables such as oxygen and hydrogen.

**Electrical Generation and Illumination Officer (EGIL)**

Responsible for power management, fuel cell operation, vehicle lighting and the master caution and warning system.

**Payloads Officer (PAYLOADS)**

Coordinates all payload activities; serves as principal interface with remote payload operations facilities.

**Data Processing Systems Engineer (DPS)**

Responsible for all onboard mass memory and data processing hardware; monitors primary and backup flight software systems; manages operating routines and multi-computer configurations.

**Propulsion Engineer (PROP)**

Manages the reaction control and orbital maneuvering thrusters during all phases of flight; monitors fuel usage and storage tank status; calculates optimal sequences for thruster firings.

**Booster Systems Engineer (BOOSTER)**

Monitors main engine and solid rocket booster performance during ascent phase.

**Ground Controller (GC)**

Coordinates operation of ground stations and other elements of worldwide space tracking and data network; responsible for MCC computer support and displays.

**Maintenance, Mechanical, Arm & Crew Systems (MMACS)**

Formerly known as RMU; responsible for remote manipulator system; monitors auxilliary power units and hydraulic systems; manages payload bay and vent door operations.

**Extravehicular Activities (EVA)**

A specialist responsible for monitoring and coordinating preparations for and execution of space walks. Responsibilities include monitoring suit and EVA hardware performance.

**Payload Data & Retrieval System (PDRS)**

A specialist responsible for monitoring and coordinating the operation of the remote manipulator system.

**Flight Surgeon (SURGEON)**

Monitors health of flight crew; provides procedures and guidance on all health-related matters.

**Public Affairs Officer (PAO)**

Provides real-time explanation of mission events during all phases of flight.

###

## STS-46 FLIGHT CONTROL TEAM STAFFING

<u>POSITION</u>	<u>ASCENT/ENTRY</u>	<u>ORBIT 1</u>	<u>ORBIT 2</u>	<u>ORBIT 3</u>
FLIGHT	Ron Dittmore	Ron Dittmore	Chuck Shaw	Phil Engelauf
CAPCOM	Ken Reightler (A) Jim Halsell (E)	Bill McArthur	Jeff Wisoff	Sam Gemar
FAO	Neil Woodbury	Neil Woodbury	Michael Hurt	John Curry
INCO	Chris Counts	Chris Counts	Richard LaBrode	Joseph Fanelli
FDO	Matt Abbott (A) Keith Fletcher (E)	Dan Adamo	Bill Tracy	Tim Brown
TRAJ	Ed Gonzalez (A) Charles Sparks (E)	Lisa Shore	Roger Simpson	Bill Britz
GPO	Matthew Glenn (A) Dennis Bentley (E)	Linda Gavin	John Malarkey	Chris Meyer
GNC	Stanley Schaefer	Steve Elsner	Kenneth Bain	Leroy Cain
EECOM	Pete Cerna	Pete Cerna	Linda Perrine	Dave Herbek

EGIL	Robert Armstrong	Robert Armstrong	Larry Minter	Ben Pawlik
PAYLOADS	Nellie Carr	Nellie Carr	Jeff Hanley	Tim Baum
DPS	Gary Sham	Gary Sham	James Hill	Terry Keeler
PROP	William Powers	William Powers	Carlyle Lowe	Lonnie Schmitt
BOOSTER	Ken Dwyer (A/E)	N/A	N/A	N/A
GC	John Wells Lynn Vernon	Al Davis Mike Marsh	Bob Reynolds Johnnie Brothers	Frank Stolarski Melissa Blizzard
EVA	N/A	N/A	N/A	N/A
PDRS	Albert Lee	Albert Lee	Don Pallesen	Gary Pollock
MMACS	Robert Doremus	Robert Doremus	Ladessa Hicks	H. Karl Pohl
SURGEON	Roger Billica (A) Brad Beck (E)	Larry Pepper	Denise Baisden	Phil Stepaniak
PAO	Jeff Carr (A) Kari Fluegel (E)	Jeff Carr	James Hartsfield	Kyle Herring

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# NASA News

National Aeronautics and  
Space Administration

**Lyndon B. Johnson Space Center**  
Houston, Texas 77058  
AC 713 483-5111

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For Release

Barbara Schwartz <sup>3</sup>  
RELEASE No. 92-04~~2~~

July 29, 1992

**NOTE TO EDITORS:  
NASA WELCOMES NEW ASTRONAUT CLASS OF 1992**

Twenty-four astronaut candidates will arrive at JSC to begin a year of familiarization training Aug. 3. There will be 5 international mission specialists joining the 15 mission specialists and 4 pilots selected by NASA in March 1992.

Badged news media are invited to meet the group in Bldg. 9N by the Space Station Mockup, Aug. 3 at 3 p.m. This will be the only availability of the candidates until after the year-long training program is complete.

Attached is background information on the astronaut candidates.

-end-

### **CANADIAN SPACE AGENCY (CSA):**

Marc Garneau, Ph.D., 43, heads the Canadian Astronaut Office and flew on Space Shuttle mission STS-41G in October 1984. He served as a combat systems engineer in the Canadian Navy and as design authority for naval communications and electronic warfare systems. Garneau has a doctorate in electrical engineering from the Imperial College of Science and Technology in England.

Chris Hadfield, Maj., RCAF, 33, has been at the U.S. Navy Test Pilot School in Patuxent River, MD, for the last five years flying the F/A-18 and was recently honored as the U.S. Navy test pilot of the year. He is a graduate of the U.S. Air Force Pilot School and has a masters degree in Aviation Systems from the University of Tennessee.

### **EUROPEAN SPACE AGENCY (ESA):**

Maurizio Cheli (pronounced Kae-le), 33, is Italian. He served as a military test pilot with the Italian Air Force after attending the Empire Test Pilots school in England. He has a physics degree from the University of Rome.

Jean-Francois Clervoy (pronounced Kler-vwah), 33, is French. He is an engineer with a masters degree from Ecole Polytechnique in Palaiseau, France. Clervoy was designated an astronaut by CNES (the French space agency) in 1985. He heads the parabolic flight program for CNES.

### **NATIONAL SPACE DEVELOPMENT AGENCY OF JAPAN (NASDA):**

Koichi Wakata, 29, is a structural engineer in the airframe group with Japan Airlines and has a masters degree in applied mechanics.

### **NATIONAL AERONAUTICS AND SPACE ADMINISTRATION (NASA):**

#### **Mission Specialists:**

Daniel T. Barry, Ph.D., M.D., 38, was born in Norwalk, CT, and resides in Ann Arbor, MI. He is an assistant professor at the University of Michigan Medical Center. Barry has a Ph.D. in electrical engineering and computer science from Princeton University and a medical degree from the University of Miami.

Charles E. Brady, Jr., Cdr., USN, 40, was born in Pinehurst, NC, and resides in Oak Harbor, WA. Brady, who graduated from Duke University Medical School, is a flight surgeon at the Naval Air Station in Whidbey Island, WA.

Catherine G. Coleman, Ph.D., Capt., USAF, 31, was born in Charleston, SC, and resides in Dayton, OH. She has a doctorate in polymer science and engineering from the University of Massachusetts and is a research chemist at Wright-Patterson AFB, OH.

Michael L. Gernhardt, Ph.D., 36, was born in Mansfield, OH, and resides in Webster, TX. He has a doctorate in bioengineering from the University of Pennsylvania and is vice president and general manager of Oceanering Space Systems.

John M. Grunsfeld, Ph.D., 33, was born in Chicago, IL, and resides in Pasadena, CA. He has a doctorate in physics from the University of Chicago and is a senior research fellow at the California Institute of Technology.

Wendy B. Lawrence, Lt. Cdr., USN, 33, was born in Jacksonville, FL, and resides in Crownsville, MD. She has a masters degree in ocean engineering from the Massachusetts Institute of Technology and is a physics instructor at the U.S. Naval Academy.

Jerry M. Linenger, Ph.D., Cdr., USN, 37, was born in Mt. Clemens, MI, and resides in San Diego, CA. He has a doctorate in epidemiology from the University of North Carolina and is a medical researcher at the Naval Health Research Center in San Diego.

Richard M. Linnehan, DVM, Capt., USA, 34, was born in Lowell, MA, and resides in San Diego, CA. He received his degree in veterinary medicine from Ohio State University and is a clinical veterinarian at the U.S. Army Element of the Naval Ocean Systems Center in San Diego.

Michael E. Lopez-Alegria, Lt. Cdr., USN, 34, was born in Madrid, Spain, and resides in Waldorf, MD. He has a masters degree in aeronautical engineering from the U.S. Naval Postgraduate School and is an ES-3A Program manager at the Naval Air Test School in Patuxent River.

Scott E. Parazynski, M.D., 31, was born in Little Rock, AR, and resides in Evergreen, CO. He received his medical degree from Stanford University and is an emergency medicine resident in Denver.

Winston E. Scott, Cdr., USN, 41, was born in Miami, FL, and resides in Yardley, PA. He has a masters degree in aeronautical engineering from the U.S. Naval Postgraduate School and is deputy director of the Tactical Air Systems Department at the Naval Air Development Center in Warminster.

Steven L. Smith, 34, was born in Phoenix, AZ, and resides in Houston, TX. He has masters degrees in electrical engineering and business administration from Stanford University and is a payload flight controller at Johnson Space Center.

Joseph R. Tanner, 42, was born in Danville, IL, and resides in Houston, TX. He has a bachelors degree in mechanical engineering from the University of Illinois and is deputy chief of the Aircraft Operations Division at Johnson Space Center.

Andrew S. W. Thomas, Ph.D., 40, was born in Adelaide, Australia, and resides in Pasadena, CA. He received his doctorate in mechanical engineering from the University of Adelaide and is group supervisor of microgravity research at the Jet Propulsion Laboratory.

Mary E. Weber, Ph.D., 29, was born in Cleveland, OH, and resides in Austin, TX. She received her doctorate in chemistry from the University of California-Berkeley and is a materials engineer at Texas Instruments on assignment to SEMATECH.

#### **Pilots:**

Scott J. Horowitz, Ph.D., Capt., USAF, 35, was born in Philadelphia, PA, and resides at Edwards AFB, CA. He has a doctorate in aerospace engineering from Georgia Tech and is an experimental test pilot at Edwards AFB.

Brent W. Jett, Jr., Lt. Cdr., USN, 33, was born in Pontiac, MI, and resides in California, MD. He has a masters degree in aeronautical engineering from the U.S. Naval Postgraduate School and is a fighter pilot and squadron department head at the Naval Air Station in Oceana, VA.

Kevin R. Kregel, 35, was born in New York, NY, and resides in Houston, TX. He has a bachelors degree in aeronautical engineering from the U.S. Air Force Academy and a masters in public administration from Troy State University. Kregel is an aeronautical research pilot at the Johnson Space Center.

Kent V. Rominger, Lt. Cdr., USN, 35, was born in Del Norte, CO, and resides in Poway, CA. He has a masters degree in aeronautical engineering from the U.S. Naval Postgraduate School and is an operations officer on the VF-211 at the Naval Air Station at Miramar.

**NASA** NewsNational Aeronautics and  
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For Release

Barbara Schwartz  
RELEASE NO. 92-044

August 4, 1992

**NOTE TO EDITORS: STS-47 PREFLIGHT BRIEFINGS SET**

STS-47 Spacelab-J preflight briefings will be held Aug. 10-11 to provide background information on the life sciences and materials processing mission of NASA and National Space Development Agency of Japan (NASDA). The schedule for the briefings follows:

Date	Time (CDT)	Briefing	Location
8/10	8 a.m.	Mission Overview Milt Heflin, Flight Director Aubray King, Mission Manager	JSC* MSFC*
	9 a.m.	Science Overview Dr. Fred Leslie, Mission Scientist Dr. Yoshimori Fujimori, NASDA Project Scientist Others TBD	MSFC
8/11	8 a.m.	Astronaut Crew Briefing Robert L. "Hoot" Gibson, Commander Curtis L. Brown, Jr., Pilot Mark C. Lee, Payload Commander N. Jan Davis, Ph.D., Mission Specialist Jay Apt, Ph.D., Mission Specialist Mae C. Jemison, M.D., Mission Specialist Mamoru Mohri, Ph.D., Payload Specialist	JSC
	10 a.m.	NASDA Press Conference Kazuhiko Yoneyama, Deputy FMPT Mission Executive Mamoru Mohri, Spacelab-J Payload Specialist Note: This briefing will be in Japanese and will not be carried on NASA Select TV.	JSC

Round-robin interviews will be conducted with the astronaut crew following the briefings. *Reporters wishing to participate in these interview sessions must notify the Johnson Space Center Newsroom by 4:30 p.m. CDT, Aug. 7.* These interviews will not be broadcast on NASA Select TV.

All briefings will be carried on NASA Select TV, except where noted, with two-way audio for Q&A from NASA Headquarters and other centers. NASA Select may be accessed through Satcom F2R, transponder 13, 72 degrees west longitude.

\*JSC - Johnson Space Center

\*MSFC - Marshall Space Flight Center

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# NASA News

National Aeronautics and  
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Lyndon B. Johnson Space Center  
Houston, Texas 77058  
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For Release

Barbara Schwartz  
RELEASE NO. 92-045

August 4, 1992

## NOTE TO EDITORS: STS-46 EURECA/TSS POSTFLIGHT BRIEFING SET

The STS-46 postflight crew press conference will be held at the Johnson Space Center, building 2 news conference room, Friday, Aug. 14, at 3:30 p.m. CDT. Crew members will narrate photography from their current mission to deploy the European Retrievable Carrier satellite and to gather data on the Tether Satellite System and will answer questions after the briefing.

Reporters are invited to participate on location at JSC or by two-way audio from NASA Headquarters and other centers. The briefing will be carried on NASA Select television, Satcom F2R, transponder 13, located at 72 degrees west longitude.

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# NASA News

National Aeronautics and  
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Lyndon B. Johnson Space Center  
Houston, Texas 77058  
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For Release

Barbara Schwartz  
RELEASE: 92-046

August 14, 1992

## ASTRONAUT SULLIVAN TO BECOME CHIEF SCIENTIST AT NOAA

Kathryn D. Sullivan, Ph.D., will be detailed to the National Oceanic and Atmospheric Administration (NOAA) as Chief Scientist, pending Senate confirmation to make this a permanent assignment. She will begin her new assignment Aug. 17.

A veteran of three space flights, Sullivan became the first spacewalking U.S. woman on her first mission, STS-41G, in Oct. 1984, when she and fellow astronaut David Leestma conducted a 3-1/2-hour extravehicular demonstration of the feasibility of refueling satellites in space. Also, the crew worked on a number of scientific Earth observations experiments.

In April 1990, Sullivan was a member of the STS-31 crew, responsible for deploying the Hubble Space Telescope and conducting a variety of middeck experiments including protein crystal growth, polymer membrane processing and the effects of weightlessness and magnetic fields on an ion arc.

More recently, Sullivan was Payload Commander on STS-45 in March 1992, the first Spacelab mission dedicated to NASA's Mission to Planet Earth to study the Earth's atmosphere.

Sullivan's activities before joining NASA in 1978 were concentrated in academic study and research. Her doctoral studies at Dalhousie University in Halifax, Nova Scotia, included participation in a variety of oceanographic expeditions, under the auspices of the U.S. Geological Survey, Woods Hole Oceanographic Institute in Massachusetts and the Bedford Institute in Dartmouth, Nova Scotia. Her research included the Mid-Atlantic Ridge, the Newfoundland Basin and fault zones off the Southern California Coast.

- more -

- 2 -

As an oceanography officer in the U.S. Naval Reserve, Sullivan currently holds the rank of lieutenant commander. She also was an Adjunct Professor of Geology at Rice University in Houston from 1985 to 1992.

"My 14 years at NASA have been immensely rewarding, both professionally and personally. I will take many cherished memories with me, particularly the superb people who make up the Shuttle team. I know they can craft this country an exciting spacefaring future, and I will watch their exploits with great interest and pride," Sullivan said.

"Kathy is the consummate space pioneer. Her outstanding accomplishments as an astronaut and her work as a member of the National Commission on Space have paved the way for space exploration in the 21st century. Although Kathy is moving on to another career, she leaves a legacy for all that follow. We will miss her and wish her great success in her new position," Director of Flight Crew Operations Donald R. Puddy said.

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# NASA News

National Aeronautics and  
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Lyndon B. Johnson Space Center  
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For Release

Barbara Schwartz  
RELEASE 92-047

August 27, 1992

## CREW ASSIGNMENTS ANNOUNCED FOR STS-58 AND STS-61

John E. Blaha (Col., USAF) will command the Spacelab Life Sciences-2 Space Shuttle mission STS-58 scheduled for launch next summer. This mission will continue life sciences research on adaptation to microgravity in preparation for Space Station Freedom and future planetary exploration. Blaha is a veteran of three previous Space Shuttle missions, as Pilot on STS-29 in March 1989 and STS-33 in November 1989 and as Commander on STS-43 in August 1991.

Pilot on STS-58 is Richard A. Searfoss (Maj., USAF), a member of the 1990 astronaut class. This is Searfoss' first flight. William S. McArthur, Jr., (Lt. Col., USA), also from the astronaut class of 1990 and assigned to his first flight, will be a mission specialist.

Previously assigned crew members are Payload Commander M. Rhea Seddon, M.D., assigned in October 1991, and mission specialists Shannon Lucid, Ph.D., and David Wolf, M.D., both assigned in December 1991.

Three mission specialists with spacewalking experience are named to join Payload Commander Story Musgrave, M.D., on STS-61 Hubble Space Telescope servicing mission scheduled for late 1993.

They are Tom Akers (Lt. Col., USAF) who flew on STS-41 in October 1990 and STS-49 in May 1992; Jeffrey A. Hoffman, Ph.D., who flew on STS-51-D in April 1985, STS-35 in December 1990 and STS-46 in August 1992; and Kathryn C. Thornton, Ph.D., who flew on STS-33 in November 1989 and STS-49 in May 1992.

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# NASA News

National Aeronautics and  
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**Lyndon B. Johnson Space Center**  
Houston, Texas 77058  
AC 713 483-5111

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For Release

**Barbara Schwartz**  
RELEASE: 92-048

September 2, 1992

## **PAYLOAD COMMANDER NAMED FOR IML-2 MISSION**

Richard J. Hieb is named payload commander on the second flight of the International Microgravity Laboratory (IML-2) on Space Shuttle mission STS-66 scheduled for the summer of 1994. The IML series of missions provide opportunities for the international scientific community to conduct life sciences, materials sciences, atmospheric and astronomical studies in the microgravity Spacelab laboratory.

As payload commander, Hieb is responsible for coordinating all payload requirements for the mission.

Hieb is a veteran of two previous Space Shuttle missions. He was the mission specialist on STS-39, an unclassified Department of Defense flight in May 1991, and was responsible for operating the Infrared Background Signature Satellite, during release and retrieval using the robot arm and as a free-flying satellite. Hieb was also a mission specialist on STS-49 in May 1992. The crew on this first flight of the new orbiter Endeavour rescued, repaired, and reboosted the stranded Intelsat VI F3 communications satellite.

-end-

National Aeronautics and  
Space Administration

Lyndon B. Johnson Space Center  
Houston, Texas 77058  
AC 713 483-5111

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For Release

Jeffrey Carr  
Release No. 92-049

September 9, 1992

## **FLIGHT CONTROL OF STS-47**

Flight control for STS-47, the 2nd voyage of Endeavour, will follow the procedures and traditions common to U.S. manned space flights since 1965, when the Mission Control Center was first used.

Responsibility for conducting Shuttle operations will revert to the Mission Control Center (MCC) in Houston once Endeavour's two solid rocket boosters ignite. Mission support in the MCC will begin five hours prior to launch and continue through landing.

The primary objectives of mission STS-47 are to conduct joint investigations in materials processing, fluid physics, and life sciences on behalf of NASA and NASDA, the space development agency of Japan.

Orbiter operations will be conducted from Flight Control Room One (FCR-1) on the second floor of the MCC located in Bldg. 30 at the Johnson Space Center. The teams of flight controllers will alternate shifts in the control center and in nearby analysis and support facilities. The handover between each team takes about an hour and allows each flight controller to brief his or her replacement on developments during the previous two shifts.

Once a "go" for orbit operations has been declared by Mission Control, the crew will begin the activation of Spacelab subsystems and experiment devices for the start of a full week of science operations. Payload science operations will be controlled from the Payload Operations Control Center at the Marshall Space Flight Center in Huntsville, Alabama.

The flight control teams for this mission will be referred to as the Ascent/Entry, Orbit 1, Orbit 2, and Orbit 3 teams. The ascent and entry phases will be conducted by flight director Wayne Hale. The Orbit 1 team will also be directed by Al Pennington. The Orbit 2 team will be headed by lead flight director Milt Heflin. The Orbit 3 team will be led by Linda Ham.

###

## MCC POSITIONS AND CALL SIGNS FOR STS-47

The flight control positions in the MCC, and their responsibilities, are:

### **Flight Director (FLIGHT)**

Has overall responsibility for the conduct of the mission.

### **Spacecraft Communicator (CAPCOM)**

By tradition an astronaut; responsible for all voice contact with the flight crew.

### **Flight Activities Officer (FAO)**

Responsible for procedures and crew timelines; provides expertise on flight documentation and checklists; prepares messages and maintains all teleprinter and/or Text and Graphics System traffic to the vehicle.

### **Integrated Communications Officer (INCO)**

Responsible for all Orbiter data, voice and video communications systems; monitors the telemetry link between the vehicle and the ground; oversees the uplink command and control processes.

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Responsible for monitoring vehicle performance during the powered flight phase and assessing abort modes; calculating orbital maneuvers and resulting trajectories; and monitoring vehicle flight profile and energy levels during reentry.

### **Trajectory Officer (TRAJECTORY)**

Also known as "TRAJ," this operator aids the FDO during dynamic flight phases and is responsible for maintaining the trajectory processors in the MCC and for trajectory inputs made to the Mission Operations Computer.

### **Guidance, Navigation & Control Systems Engineer (GNC)**

Responsible for all inertial navigational systems hardware such as star trackers, radar altimeters and the inertial measurement units; monitors radio navigation and digital autopilot hardware systems.

### **Guidance & Procedures Officer (GPO)**

Responsible for the onboard navigation software and for maintenance of the Orbiter's navigation state, known as the state vector. Also responsible for monitoring crew vehicle control during ascent, entry, or rendezvous.

### **Rendezvous Guidance and Procedures Officer (RENDEZVOUS)**

The RENDEZVOUS GPO is specialist who monitors onboard navigation of the Orbiter during rendezvous and proximity operations. The UARS deploy maneuver involves an active separation, using rendezvous radar to verify separation rates, requiring the support of this specialist

### **Environmental Engineer & Consumables Manager (EECOM)**

Responsible for all life support systems, cabin pressure, thermal control and supply and waste water management; manages consumables such as oxygen and hydrogen.

### **Electrical Generation and Illumination Officer (EGIL)**

Responsible for power management, fuel cell operation, vehicle lighting and the master caution and warning system.

### **Payloads Officer (PAYLOADS)**

Coordinates all payload activities; serves as principal interface with remote payload operations facilities.

### **Data Processing Systems Engineer (DPS)**

Responsible for all onboard mass memory and data processing hardware; monitors primary and backup flight software systems; manages operating routines and multi-computer configurations.

### **Propulsion Engineer (PROP)**

Manages the reaction control and orbital maneuvering thrusters during all phases of flight; monitors fuel usage and storage tank status; calculates optimal sequences for thruster firings.

### **Booster Systems Engineer (BOOSTER)**

Monitors main engine and solid rocket booster performance during ascent phase.

### **Ground Controller (GC)**

Coordinates operation of ground stations and other elements of worldwide space tracking and data network; responsible for MCC computer support and displays.

### **Maintenance, Mechanical, Arm & Crew Systems (MMACS)**

Formerly known as RMU; responsible for remote manipulator system; monitors auxiliary power units and hydraulic systems; manages payload bay and vent door operations.

**Extravehicular Activities (EVA)**

A specialist responsible for monitoring and coordinating preparations for and execution of space walks. Responsibilities include monitoring suit and EVA hardware performance.

**Payload Data & Retrieval System (PDRS)**

A specialist responsible for monitoring and coordinating the operation of the remote manipulator system.

**Flight Surgeon (SURGEON)**

Monitors health of flight crew; provides procedures and guidance on all health-related matters.

**Public Affairs Officer (PAO)**

Provides real-time explanation of mission events during all phases of flight.

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EGIL	Ray Miessler	Ray Miessler	Robert Armstrong	Larry Minter
PAYLOADS	Debra Bulgher	Debra Bulgher	Roger Galpin	Jean Costlow
DPS	Gloria Araiza	Gloria Araiza	Mark Erminger	Gary Sham
PROP	Lonny Shmitt	Lonny Shmitt	Thomas Lazo	Bill Powers
BOOSTER	Terri Stowe			
GC	John Snyder Ed Klein	Joe Aquino Bob Reynolds	John Wells Dennis Williams	Henry Allen Terry Quick
MMACS	R. Kevin McCluney	R. Kevin McCluney	Alan Bachik	Alan Simon
PAO	Kyle Herring (A) James Hartsfield (E)	Kyle Herring	Billie Deason	Kelly Humphries

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## STS-47 FLIGHT CONTROL TEAM STAFFING

<u>POSITION</u>	<u>ASCENT/ENTRY</u>	<u>ORBIT 1</u>	<u>ORBIT 2</u>	<u>ORBIT 3</u>
FLIGHT	Wayne Hale	Al Pennington	Milt Heflin	Linda Ham
CAPCOM	Sid Gutierrez (A) Ken Reightler (E)	Bill McArthur	Sam Gemar	Don Thomas
FAO	Jennifer Price	Jennifer Price	Ann Bowersox	Pete Hasbrook
INCO	Jay Conner	Jay Conner	Harry Black	Richard LaBrode
FDO	Brian Perry (A) Deborah Kessler (E)	Bill Tracy	Steve Stich	Lisa Shore
TRAJ	Doug Rask (A) Keith Fletcher	Mark Riggio	Dick Theis	Dan Adamo
GPO	Jeff Bertsch (A) Glen Pogue (E)			
GNC	John Shannon	Bradley Schoenbauer	Leroy Cain	Phillip Perkins
EECOM	Leonard Riche	Leonard Riche	Charles Dingell	Linda Perrine

# NASA News

National Aeronautics and  
Space Administration

Lyndon B. Johnson Space Center  
Houston, Texas 77058  
AC 713 483-5111

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For Release

Jeffrey Carr  
RELEASE NO. 92-050

September 14, 1992

**NOTE TO EDITORS: Astronaut Mae Jemison to Speak with Chicago Youth**

Endeavour Astronaut Dr. Mae C. Jemison will speak, from orbit, with students from Chicago area schools in a live television event with Chicago's Museum of Science and Industry on Wednesday, September 16, 1992, just before 7 p.m. central time.

The event has been developed through collaboration between NASA, the museum, the Chicago Board of Education, and Chicago TV super station WGN, and will feature grade school students from Jemison's home town who will question her on various science topics related to space flight.

WGN will provide for the broadcast link with NASA's Johnson Space Center and will provide pool feeds at the museum to news media interested in covering the event in its entirety.

NASA Select Television will carry live video from Endeavour plus two-way audio during the event. NASA Select, carried on Satcom F2R transponder 13, is in the public domain and is available for rebroadcast.

# NASA News

National Aeronautics and  
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**Lyndon B. Johnson Space Center**  
Houston, Texas 77058  
AC 713 483-5111

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For Release

Kari Fluegel  
Release No. 92-051

September 18, 1992

## NASA CONTRACT AWARDED FOR NEW SPACE SHUTTLE DISPLAY SYSTEM

NASA recently signed a \$59.3 million supplemental agreement with Rockwell International's Space Systems Division, Downey, Calif., for the design, development, test and evaluation of a new system to update Space Shuttle orbiter cockpit displays.

The Multifunction Electronic Display Subsystem (MEDS) will be an upgrade from the existing electro-mechanical flight instruments, multifunction cathode ray tube display subsystem and dedicated display subsystem.

The MEDS display will provide state-of-the-art, color, multifunction interfaces between the flight crew and flight computers, providing astronauts with altitude, airspeed, heading and vehicle attitude information.

The system will be retrofitted into the orbiter fleet providing uncluttered control panels. It will provide multifunction and full-color displays, high reliability and safety, reduced operating costs and increased performance capabilities of the orbiter vehicle displays and support devices.

In addition to the design, development, test and evaluation costs, a ceiling of \$89.3 million has been set for production. A final cost will be negotiated after the critical design review.

Work will be completed at Rockwell's Downey, Calif., facility and at the Glendale, Ariz., facility of Honeywell Inc., Satellite Systems Operations.

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# NASA News

National Aeronautics and  
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AC 713 483-5111

For Release:

Barbara Schwartz  
RELEASE No. 92-052

September 21, 1992

## STS-52 AND MARS OBSERVER PREFLIGHT BRIEFINGS SET

Briefings on Shuttle mission STS-52, scheduled for mid-October, and the Mars Observer mission, to be launched Sept. 25, will take place Sept. 24 from 8 a.m. to 2:45 p.m. CDT.

TIME	BRIEFING/BRIEFERS	LOCATION
8:00 a.m.	STS-52 Mission Overview Bob Castle, Lead Flight Director	JSC
9:00	Canadian Experiment-2 Bruce Aikenhead, Director General Canadian Astronaut Program Office	JSC
9:30	LAGEOS-II Program Overview Louis O. Caudill, LAGEOS-II Program Manager (NASA Hqs.)	JSC
	LAGEOS-II Science Dr. Ronald Kolenkiewicz, LAGEOS-II Project Scientist (GSFC)	
	LAGEOS Mission James Murphy, LAGEOS-II Project Manager (GSFC)	
	LAGEOS-II/IRIS Roberto Ibba, LAGEOS-II/IRIS Program Manager (Italian Space Agency)	
10:00	Mars Observer Briefing	KSC
11:00	LUNCH Break	

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1:00 p.m.	United States Microgravity Payload-1 Overview Ed Valentine, USMP-1 Mission Manager (MSFC)	MSFC
	USMP-1 Science Overview Dr. Sandor Lehoczky, USMP-1 Mission Scientist (MSFC)	
	Lambda Point Experiment Dr. John Lipa, Principal Investigator, Stanford University	
	MEPHISTO Experiment Jean-Jacques Favier, Principal Investigator Commissariat a l'Energie Atomique	
1:45	STS-52 Crew Briefing James D. Wetherbee (Cdr, USN), Commander Michael A. Baker (Capt, USN), Pilot William M. Shepherd (Capt, USN), Mission Specialist Tamara E. Jernigan, Ph.D., Mission Specialist Charles Lacy Veach, Mission Specialist Steven G. MacLean, Ph.D., Payload Specialist, Canadian Astronaut Program	JSC

The astronauts will be available for approximately an hour after the briefings for round-robin interviews. Reporters wishing to participate in the interview sessions should notify the JSC newsroom by noon on Sept. 23.

Only the briefings will be carried on NASA Select television with two-way audio for questions from NASA Headquarters and other centers. NASA Select programming is carried on SATCOM F2R, transponder 13, located at 72 degrees west longitude.

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# NASA News

National Aeronautics and  
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**Lyndon B. Johnson Space Center**  
Houston, Texas 77058  
AC 713 483-5111

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For Release

Barbara Schwartz  
RELEASE No. 92-053

September 25, 1992

**NOTE TO EDITORS:  
STS-47 SPACELAB-J POSTFLIGHT CREW PRESS CONFERENCE SET**

The STS-47 postflight crew press conference will be Tues., Sept. 29, at 9 a.m. CDT at the Johnson Space Center, Houston, in building 2, room 135.

The crew members will narrate film highlights of their spacelab mission to study life sciences and materials research in cooperation with the National Space Development Agency of Japan (NASDA). The briefing will be carried on NASA Select television with two-way audio for questions from NASA Headquarters and other centers.

Japanese payload specialist Mamoru Mohri and Kazuhiko Yoneyama, Deputy Executive Director of the FMPT (Spacelab-J), NASDA, will brief Japanese news media at noon. This briefing will be in Japanese and will not be carried on NASA Select television.

For more information on these briefings or NASA Select, call the Johnson Space Center newsroom at 713-483-5111.

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# NASA News

National Aeronautics and  
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Lyndon B. Johnson Space Center  
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AC 713 483-5111

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For Release

September 30, 1992

Barbara Schwartz  
Release No. 92-054

## SHUTTLE MISSION STS-53 PREFLIGHT BRIEFINGS SET FOR OCT. 6

Space Shuttle mission STS-53 preflight briefings will be held Oct. 6 at the Johnson Space Center, Houston, Building 2, room 135, from 9 a.m. until 2 p.m. central time.

The primary payload for this dedicated Department of Defense (DoD) mission is classified and will not be discussed in pre- and post-mission briefings and materials nor will it be discussed during the course of the mission itself.

STS-53 Lead Flight Director Rob Kelso will provide a mission overview (with the exception of primary payload operations), followed by DoD and NASA briefings on secondary experiments in the cargo bay and on the mid-deck.

After a lunch break, the astronaut crew will brief their mission assignments (excluding primary payload activities and responsibilities).

The astronauts will be available for round-robin interviews following the press conference. News media representatives wishing to participate in the crew interviews should notify the JSC newsroom by noon Oct. 5.

Only the briefings will be carried live on NASA Select television with two-way audio for questions from NASA Headquarters and other centers. NASA Select programming is carried on Satcom F2R, transponder 13, located at 72 degrees west longitude.

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# NASA NEWS

National Aeronautics and  
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Houston, Texas 77058  
AC 713 483-5111

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For Release

James Hartsfield  
Johnson Space Center  
(713) 483-5111

October 14, 1992

George Diller  
Kennedy Space Center, Florida  
(407) 867-2468

Release No. 92-055

## ATLANTIS TO MAKE EAST TEXAS STOPS EN ROUTE TO CALIFORNIA

Weather permitting, the Space Shuttle Atlantis will make an East Texas debut this weekend with a flyby of Tyler, a stop at Longview, and an overnight stay at Houston's Ellington Field as it makes a piggyback trip to Palmdale, Calif.

Atlantis will be carried atop the Boeing 747 Shuttle Carrier Aircraft from Florida's Kennedy Space Center to Rockwell's Palmdale, Calif., shuttle factory for a series of inspections and upgrades all shuttles have gone through periodically. If weather is acceptable, Atlantis will depart Kennedy at 8:30 a.m. EDT on Saturday, Oct. 17; fly by Tyler, above that city's annual Rose Parade activities, about 10:30 a.m. CDT; and land at the Gregg County Airport near Longview about 11 a.m. CDT. At Gregg County Airport, Atlantis will be received with Space Day festivities that will include local bands and dignitaries.

Atlantis will depart Gregg County Airport at 2:30 p.m. CDT and fly to Ellington Field, arriving about 3:30 p.m. CDT. At Ellington, Atlantis will remain overnight and the public will be allowed to view the shuttle and carrier aircraft parked in front of NASA's Hangar 990 until 10 p.m. CDT. Atlantis is scheduled to leave Ellington at about 8 a.m. CDT Sunday, Oct. 18, land at Biggs Army Air Field in El Paso for a brief refueling stop about 9:30 a.m. MDT and arrive at Palmdale about 1:10 p.m. PDT.

Atlantis will remain at Palmdale for about a year, with a return to Florida planned in late September 1993. At Palmdale, Atlantis will undergo a series of structural inspections and modifications. Several items of updated and new equipment will be installed that will make it equivalent in capability to Endeavour, NASA's newest shuttle, and which

- more -

will enable the accomplishment of the first NASA mission to dock with the Russian Space Agency's Mir Space Station.

The upgrades include a drag chute to aid in landings; improvements to the auxiliary power units, generators that are used to power the hydraulics onboard which in turn operate the elevons, ailerons, rudder and brakes; the addition of a fifth set of hydrogen and oxygen tanks that will enable Atlantis to stay in space for longer periods by allowing more storage of the substances used to generate electricity on board; the addition of an updated galley, or kitchen, which allows additional food storage space; the addition of another tank of nitrogen aboard to allow a larger supply of breathing air for the crew; a regenerative system that will add more capability to filter carbon dioxide from the cabin atmosphere; and a change in connections that will allow Atlantis to fly with either the current model shuttle toilet aboard or an improved toilet designed to allow a larger capacity for storing waste. After the upgrades, Atlantis will be able to remain in space for as long as 10 days.

After its return to Florida, Atlantis' next flight will be Shuttle mission STS-63, tentatively set for a March 1994 launch. STS-63 will carry the Lidar in Space Technology Experiment-1 (LITE-1), an instrument that would emit laser energy into the upper atmosphere of Earth and measure various aspects of the atmosphere, such as cloud top heights, densities, aerosol amounts and temperatures. The astronaut crew for STS-63 has not yet been assigned.

Later, Atlantis will be outfitted with the remaining equipment, including a Russian-built docking mechanism, needed to dock with the Russian Space Agency Space Station Mir. Atlantis is scheduled to dock with Mir on a joint U.S.-Russian flight planned in the spring of 1995.

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# NASA News

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Houston, Texas 77058  
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For Release  
October 16, 1992

Jeffrey Carr  
Release No. 92-056

## FLIGHT CONTROL OF STS-52

Flight control for STS-52, the 13th voyage of Columbia, will follow the procedures and traditions common to U.S. manned space flights since 1965, when the Mission Control Center was first used.

Responsibility for conducting Shuttle operations will revert to the Mission Control Center (MCC) in Houston once Columbia's two solid rocket boosters ignite. Mission support in the MCC will begin five hours prior to launch and continue through landing.

The primary objectives of mission STS-52 are to deploy the LAGEOS-II satellite and to conduct a variety of investigations in materials processing, space station assembly techniques, and space technologies on behalf of NASA, the Canadian Space Agency, and commercial clients.

Orbiter operations will be conducted from Flight Control Room One (FCR-1) on the second floor of the MCC located in Bldg. 30 at the Johnson Space Center. The teams of flight controllers will alternate shifts in the control center and in nearby analysis and support facilities. The handover between each team takes about an hour and allows each flight controller to brief his or her replacement on developments during the previous two shifts.

Once a "go" for orbit operations has been declared by Mission Control, the crew will begin preparations and checkout of the LAGEOS-II for deployment on flight day two. The Payload Operations Control Center at the Marshall Space Flight Center in Huntsville, Alabama, will be manned to monitor and support operations of the United States Microgravity Payload (USMP) during six days of operations. Canadian payload controllers will support Canadian Experiments (CANEX-2) from a multipurpose support facility in the MCC.

The flight control teams for this mission will be referred to as the Ascent/Entry, Orbit 1, Orbit 2, and Planning teams. The ascent and entry phases will be conducted by flight director Jeff Bantle. The Orbit 1 team will be directed by lead flight director Bob Castle. The Orbit 2 team will be headed by Richard Jackson. The Planning team will be led by Chuck Shaw.

###

## **MCC POSITIONS AND CALL SIGNS FOR STS-52**

The flight control positions in the MCC, and their responsibilities, are:

### **Flight Director (FLIGHT)**

Has overall responsibility for the conduct of the mission.

### **Spacecraft Communicator (CAPCOM)**

By tradition an astronaut; responsible for all voice contact with the flight crew.

### **Flight Activities Officer (FAO)**

Responsible for procedures and crew timelines; provides expertise on flight documentation and checklists; prepares messages and maintains all teleprinter and/or Text and Graphics System traffic to the vehicle.

### **Integrated Communications Officer (INCO)**

Responsible for all Orbiter data, voice and video communications systems; monitors the telemetry link between the vehicle and the ground; oversees the uplink command and control processes.

### **Flight Dynamics Officer (FDO)**

Responsible for monitoring vehicle performance during the powered flight phase and assessing abort modes; calculating orbital maneuvers and resulting trajectories; and monitoring vehicle flight profile and energy levels during reentry.

### **Trajectory Officer (TRAJECTORY)**

Also known as "TRAJ," this operator aids the FDO during dynamic flight phases and is responsible for maintaining the trajectory processors in the MCC and for trajectory inputs made to the Mission Operations Computer.

### **Guidance, Navigation & Control Systems Engineer (GNC)**

Responsible for all inertial navigational systems hardware such as star trackers, radar altimeters and the inertial measurement units; monitors radio navigation and digital autopilot hardware systems.

### **Guidance & Procedures Officer (GPO)**

Responsible for the onboard navigation software and for maintenance of the Orbiter's navigation state, known as the state vector. Also responsible for monitoring crew vehicle control during ascent, entry, or rendezvous.

•

### **Rendezvous Guidance and Procedures Officer (RENDEZVOUS)**

The RENDEZVOUS GPO is specialist who monitors onboard navigation of the Orbiter during rendezvous and proximity operations.

### **Environmental Engineer & Consumables Manager (EECOM)**

Responsible for all life support systems, cabin pressure, thermal control and supply and waste water management; manages consumables such as oxygen and hydrogen.

### **Electrical Generation and Illumination Officer (EGIL)**

Responsible for power management, fuel cell operation, vehicle lighting and the master caution and warning system.

### **Payloads Officer (PAYLOADS)**

Coordinates all payload activities; serves as principal interface with remote payload operations facilities.

### **Data Processing Systems Engineer (DPS)**

Responsible for all onboard mass memory and data processing hardware; monitors primary and backup flight software systems; manages operating routines and multi-computer configurations.

### **Propulsion Engineer (PROP)**

Manages the reaction control and orbital maneuvering thrusters during all phases of flight; monitors fuel usage and storage tank status; calculates optimal sequences for thruster firings.

### **Booster Systems Engineer (BOOSTER)**

Monitors main engine and solid rocket booster performance during ascent phase.

### **Ground Controller (GC)**

Coordinates operation of ground stations and other elements of worldwide space tracking and data network; responsible for MCC computer support and displays.

### **Maintenance, Mechanical, Arm & Crew Systems (MMACS)**

Formerly known as RMU; responsible for remote manipulator system; monitors auxilliary power units and hydraulic systems; manages payload bay and vent door operations.

### **Extravehicular Activities (EVA)**

A specialist responsible for monitoring and coordinating preparations for and execution of space walks. Responsibilities include monitoring suit and EVA hardware performance.

### **Payload Data & Retrieval System (PDRS)**

A specialist responsible for monitoring and coordinating the operation of the remote manipulator system.

### **Flight Surgeon (SURGEON)**

Monitors health of flight crew; provides procedures and guidance on all health-related matters.

### **Public Affairs Officer (PAO)**

Provides real-time explanation of mission events during all phases of flight.

###

## STS-52 FLIGHT CONTROL TEAM STAFFING

<u>POSITION</u>	<u>ASCENT/ENTRY</u>	<u>ORBIT 1</u>	<u>ORBIT 2</u>	<u>PLANNING</u>
FLIGHT	Jeff Bantle	Bob Castle	Rich Jackson	Chuck Shaw
CAPCOM	Sid Gutierrez (A) Ken Reightler (E)	Bill McArthur	Sam Gemar	Don Thomas
PAO	James Hartsfield (A) Jeff Carr (E)	James Hartsfield	Billie Deason	Kari Fluegel
FAO	Tony Griffith	Tony Griffith	Debbie Jackson	Fisher Reynolds
INCO	Harry Black	Harry Black	Jay Conner	Joe Fanelli
FDO	Ed Gonzalez (A) Matt Abbott	Lisa Shore	Phil Burley	Steve Stich
TRAJ	Carson Sparks (A/E)	Tim Brown	Roger Simpson	Bill Tracy
GPO	Ken Patterson (A) Jeff Bertsch (E)	Barbara Schwartz	N/A	N/A
GNC	Stanley Schaefer	Stanley Schaefer	Ed Trlica	Bradley Schoenbauer

EECOM	Dan Molina	Dan Molina	Quinn Carelock	Leonard Riche
EGIL	Robert Armstrong	Robert Armstrong	Ben Pawlik	Larry Minter
PAYLOADS	Neil Cook	Neil Cook	Annette Hasbrook	Sharon Conover
DPS	Terry Keeler	Terry Keeler	Robert Walton	James Hill
PROP	Matthew Barry	Matthew Barry	Lonnie Schmitt	Tom Lazo
BOOSTER	Franklin Markle (A/E)	N/A	N/A	Ken Dwyer
GC	Chuck Capps John Wells	Mike Marsh Al Davis	Frank Stolarski Joe Aquino	Melissa Blizzard Dennis Williams
MMACS	Robert Doremus (A/E)	Robert Doremus	H. Karl Pohl	Bill Anderson

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# NASA News

National Aeronautics and  
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Lyndon B. Johnson Space Center  
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For Release:

Barbara Schwartz  
RELEASE NO.: 92-057

October 27, 1992

## MISSION SPECIALISTS NAMED FOR IML-2 MISSION

Leroy Chiao, Ph.D., and Donald A. Thomas, Ph.D., are assigned as mission specialists on the International Microgravity Laboratory-2, Space Shuttle mission STS-65, scheduled for June 1994

"Both Don and Leroy bring strong materials science backgrounds to the IML-2 payload crew. Their strengths will complement the previously assigned crew members in achieving the multi-science objectives of this important international mission," said Acting Director of Flight Crew Operations Steven A. Hawley.

Chiao, 32, holds a Ph.D. degree in chemical engineering from the University of California. Born in Milwaukee, Wisc., he considers Danville, Calif., his hometown. Chiao was selected by NASA in 1990. He has worked on Space Shuttle flight software verification in the Shuttle Avionics Integration Laboratory and currently is working crew equipment issues in the Mission Development Branch of the Astronaut Office.

Thomas, 37, has a doctorate degree in materials science from Cornell University. His dissertation involved evaluating the effect of crystalline defects and sample purity on the superconducting properties of niobium. He was born in Cleveland. Thomas, also in the astronaut class of 1990, has worked on issues relating to the Shuttle orbiter systems in the Safety and Operations Development Branches of the Astronaut Office. He currently is serving as a CAPCOM, an astronaut in the Mission Control Center who communicates with the Space Shuttle crew members during a mission.

Other crew members previously named to this microgravity mission are Payload Commander Richard J. Hieb and Chiaki Mukai, Ph.D. and M.D., a payload specialist from the National Space Development Agency of Japan.

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# NASA News

National Aeronautics and  
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Lyndon B. Johnson Space Center  
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For Release

Jeff Carr  
RELEASE: 92-058

October 27, 1992

## AN HISTORIC COMMUNICATIONS LINK SET FROM SPACE TO SEA

The Earth-orbiting crew of Space Shuttle Columbia will talk with the sea-voyaging crew of the historic Hawaiian canoe Hokule'a on Wednesday, Oct. 28 at 2:09 p.m. EST.

At the same time, students throughout Hawaii, plotting the course of the canoe's voyage, will watch the televised conversation. Selected students, located at the University of Hawaii's TV Lab, will ask both crews about flight and sail plans, weather, procedures for navigating both vessels and about exploration.

"There are compelling similarities between space and ocean exploration," said Myron Thompson, President of the Polynesian Voyaging Society and the father of Hokule'a's sailmaster and navigator. "The discovery and settlement of Hawaii marked the end of the first phase of human's migration using stone age technology. The voyages of the Shuttle mark the other end of this spectrum of discovery and exploration."

The Hokule'a set sail last Friday from the Cook Islands on a journey to the Hawaiian Islands. The double-hulled, 65-foot canoe is a replica of the vessels used by the Polynesians who, as early as 3 thousand years ago, explored the 20 million square miles of ocean. They discovered and settled Samoa, Tonga, the Marquesas, the Cooks, the Societies, the Tuamotus, Easter Island, New Zealand and finally Hawaii.

Carbon dating indicates that Polynesians sailed 2,500 miles from the Marquesas to first colonize Hawaii around 250 A.D. The Hokule'a will retrace the route of her ancestors to better understand the ancient seafarers accomplishments and to unlock a similar passion for discovery with students.

- more -

## Students Chart Course of Canoe and Learn Math and Sciences

"Hokule'a symbolizes the promise of the future and the great adventure of exploring a new ocean of space," Thompson said. "The excitement created by this unique contact has stimulated educational programs throughout the state.

"Both voyages of exploration require the courage, commitment and cooperation of entire societies to ensure success. We hope to demonstrate to school children that exploration is a continuum with endless possibilities," Thompson said. The theme of the Hokule'a voyage is "No Na Mamo" -- meaning "For the Generations."

During Hokule'a 30-day return voyage from Rarotonga in the Cook Islands to Hawaii, school children in Hawaii will plot the daily course of the canoe and learn about the differences between the ancient Polynesian method of navigating with today's satellite technology.

Today, only 10 Polynesians practice the ancient art of Polynesian navigation called Wayfinding. These navigators memorize star paths and other natural signs, combining them with their knowledge of currents and weather and sailing strategies.

The Hawaii Maritime Center, a cooperative partner with the Polynesian Voyaging Society, has conducted workshops to teach sailing strategies and plotting procedures and to demonstrate satellite position technology. To assist students tracking the canoe, the center has set up a phone line to access data from the Global Positioning Satellite on the canoe's location.

The Department of Education's Distance Learning and Technology Office will broadcast live hookups with the canoe and provide daily position reports. KCCN radio will broadcast daily reports of the canoe's position, weather and life-at-sea information. The "Honolulu Advertiser" will print daily reports.

The Polynesian Voyaging Society has prepared a teacher's guide and instructional tapes. In addition to math skills learned through plotting navigation, students also will learn geography, astronomy, ecology, oceanography, natural history and Polynesian cultural practices.

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For Release

Barbara Schwartz  
RELEASE NO. 92-059

October 28, 1992

## NASA NAMES CREW FOR STS-60 MISSION WITH COSMONAUT

Charles F. Bolden, Jr. (Col., USMC) will command Space Shuttle mission STS-60 in November 1993. Other crew members are pilot Kenneth S. Reightler, Jr. (Capt., USN), and mission specialists Franklin R. Chang-Diaz, Ph.D., N. Jan Davis, Ph.D., Ronald M. Sega, Ph.D., and an experienced Russian cosmonaut.

"This flight is a significant milestone in future space exploration from a scientific research standpoint as well as being the first step in our cooperative agreements with our Russian partners. We can expect tremendous accomplishments from this group of individuals, considering the outstanding credentials and backgrounds they bring to this mission," said Acting Director of Flight Crew Operations Steven A. Hawley.

Bolden, 46, piloted two Space Shuttle missions, STS-61C in January 1986 and STS-31 in April 1990, and commanded the Atmospheric Laboratory for Applications and Science mission STS-45 in March 1992. In addition to his flight experience, Bolden has held a number of management positions since his selection as an astronaut in 1980.

Most recently, Bolden was appointed Assistant Deputy Administrator at NASA Headquarters in Washington, D.C., in April. Bolden was born in Columbia, S.C., and has a bachelor of science degree in electrical science from the U.S. Naval Academy and a master of science degree in systems management from the University of Southern California.

Reightler, 41, was Pilot on Space Shuttle mission STS-48 on which the crew successfully deployed the Upper Atmosphere Research Satellite. Born in Patuxent River, Md., Reightler considers Virginia Beach, Va., to be his hometown.

- more -

Selected by NASA in June 1987, Reightler's current assignment is Chief of the Mission Support Branch in the Astronaut Office and Lead CAPCOM in Mission Control, responsible for communications with Space Shuttle crew members during flight. Reightler has master of science degrees in aeronautical engineering from the U.S. Naval Postgraduate School and in systems management from the University of Southern California.

Chang-Diaz, 42, is a veteran of three space flights -- STS-61C in January 1986, STS-34 in October 1989 and STS-46 in August 1992. Selected to become an astronaut in 1980, Chang-Diaz has a doctorate in applied plasma physics from the Massachusetts Institute of Technology. He was born in San Jose, Costa Rica.

Davis, 38, flew on STS-47 Spacelab-J, a cooperative mission with the National Space Development Agency of Japan, in September 1992. Davis was born in Cocoa Beach, Fla., but considers Huntsville, Ala., to be her hometown. Selected to become an astronaut in June 1987, Davis has a doctorate in mechanical engineering from the University of Alabama, Huntsville.

Sega, 39, was selected in January 1990 and has a doctorate in electrical engineering from the University of Colorado. This will be his first space flight. Sega is an Adjunct Professor of Physics at the University of Houston and is a Co-Principal Investigator of the Wake Shield Facility which is manifested for this flight. Born in Cleveland, Sega considers Northfield, Ohio, and Colorado Springs, Colo., to be his hometowns.

An experienced cosmonaut will fly aboard the STS-60 Space Shuttle mission. The Russian Space Agency has nominated Col. Vladimir G. Titov and Sergei K. Krikalev to undergo mission specialist training. One cosmonaut will be designated the prime crew member and the other designated backup crew member. The cosmonauts will arrive at the Johnson Space Center in early November.

Mission objectives include a number of microgravity experiments in SPACEHAB-2, the Wake Shield Facility experiment to test the creation of an ultra-vacuum in which to produce extremely pure thin film crystals for industrial uses ranging from microelectronics to lasers and superconductivity, a Capillary Pumped Loop Experiment to study a method of heat dissipation in space and a number of small experiments known as Getaway Specials flown in a bridge assembly in the orbiter's payload bay. Additionally, Russian Space Agency-sponsored life science activities will be included in the mission.

# NASA News

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For Release

Kari Fluegel

October 29, 1992

RELEASE: 92-060

## PAYLOAD SPECIALIST SELECTED FOR SECOND LIFE SCIENCES MISSION

NASA today announced the selection of Dr. Martin J. Fettman, D.V.M., as the prime payload specialist for the second Spacelab Life Sciences mission (SLS-2) scheduled for launch in August 1993.

"NASA's series of SLS missions play a central role in our program of space biomedical research," said Dr. Lennard A. Fisk, Associate Administrator for the Office of Space Science and Applications. "The experiments that Dr. Fettman and his fellow SLS-2 crew members conduct will give us valuable information on how living and working in space affects the human body."

Fettman, a professor in the Department of Pathology in Colorado State University's College of Veterinary Medicine, will join the previously named STS-58 crew consisting of Commander John Blaha, Col., USAF; Pilot Richard Searfoss, Maj., USAF; Payload Commander Rhea Seddon, M.D., and mission specialists William S. McArthur Jr., Lt. Col. USA; Shannon Lucid, Ph.D., and David Wolfe, M.D.

Jay Buckley, M.D., assistant professor at the University of Texas Southwestern Medical Center in Dallas, and Laurence Young, Sc.D., professor of aeronautics and astronautics at Massachusetts Institute of Technology, will serve as alternate payload specialists and will be the primary communicators with the payload crew during the 13-day mission focusing on the effects of microgravity on the human body. Buckley and Young also will train with the crew so they could substitute should Fettman become unable to fly.

The SLS-2 mission is the second in a series of Spacelab Life Sciences flights. SLS-1, June 5-14, 1991, provided an opportunity for scientists to study the effects of weightlessness in a comprehensive interrelated fashion using both human and animal subjects.

- more -

Most of the experiments assigned to SLS-2 are extensions of the data collection started on SLS-1. A total of 14 experiments will be flown, concentrating on the cardiovascular/cardiopulmonary systems, neuroscience, regulatory physiology and the musculoskeletal system.

Several NASA centers and organizations are involved in the development of the SLS-2 payload. Human experiments are being developed by the Life Sciences Project Division at the Johnson Space Center (JSC), Houston, while the non-human experiments are being developed by the Space Life Sciences Payloads Office at the Ames Research Center, Mountain View, Calif.

The program is managed by NASA's Office of Space Science and Applications, Washington, D.C. Gary W. McCollum is the SLS-2 Program Manager, and Dr. Frank M. Sulzman is the Program Scientist.

Mission Scientist is Dr. Howard J. Schneider, and Mission Manager is Kathryn E. Newkirk, both of JSC.

- end -

# NASA News

National Aeronautics and  
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Lyndon B. Johnson Space Center  
Houston, Texas 77058  
AC 713 483-5111

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For Release

Brian Welch  
RELEASE: 92-061

October 30, 1992

## NASA AWARDS JSC INFORMATION SYSTEMS CONTRACT

NASA today announced the selection of Grumman Technical Services Division, Titusville, Fla., a subsidiary of Grumman Corp., Bethpage, N.Y., for negotiations leading to the award of a 5-year Information Systems Contract (ISC) at the Johnson Space Center (JSC), Houston.

The total cost for the 5-year period of performance, which begins Jan. 1, 1993, is in excess of \$300 million. The contract will be awarded on a cost-plus-award fee basis.

The contract work covers Federal Information Processing resources in support of institutional systems at the Houston space center and includes virtually all computing work other than direct mission support.

The ISC will provide data systems (hosts) maintenance and operations, personal workstation installation and maintenance, customer services, networks and telecommunications services, development engineering and integration and applications software development and maintenance for JSC's wide array of institutional information systems. The contract will be administered by JSC's Information Systems Directorate.

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# NASA News

National Aeronautics and  
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Lyndon B. Johnson Space Center  
Houston, Texas 77058  
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For Release

Barbara Schwartz  
RELEASE NO.: 92-062

November 5, 1992

## EDITORS NOTE: PHOTO OPPORTUNITY WITH COSMONAUTES

Russian cosmonauts Sergei Krikalev and Vladimir Titov will be available for a photo opportunity at NASA Johnson Space Center, Houston, Tuesday, Nov. 10, at 8 a.m. CST, in Building 9A adjacent to the Shuttle trainer.

Donald R. Puddy, JSC's Special Assistant for Joint U.S./Russian Federation Programs, and the Space Shuttle mission STS-60 Pilot Kenneth S. Reightler, Jr., will introduce the cosmonauts, who will make brief statements.

News media are invited to attend and should be badged in Building 2, Room 136 before going to Building 9.

The cosmonauts will begin an intensive 3-month training program in preparation for STS-60 mission specific training and will not be available for other media activities until the initial training period is complete.

- end -

# NASA News

National Aeronautics and  
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**Lyndon B. Johnson Space Center**  
Houston, Texas 77058  
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For Release:

Barbara Schwartz  
RELEASE No. 92-063

November 9, 1992

**NOTE TO EDITORS:  
STS-52 POSTFLIGHT PRESS CONFERENCE**

The STS-52 postflight crew press conference will be Thursday, November 12, at 9 a.m. CST at the Johnson Space Center, Houston, in building 2, room 135.

The crew members will narrate film highlights of their mission to deploy the LAGEOS-2 satellite and to perform numerous scientific experiments. Canadian payload specialist Steven G. MacLean will talk about the Canadian Experiment-2, and the astronauts will discuss the United States Microgravity Payload-1.

The briefings will be carried on NASA Select television with two-way audio for questions from NASA Headquarters and other centers. NASA Select programming is carried on SATCOM F2R, transponder 13, located at 72 degrees west longitude.

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# NASA News

National Aeronautics and  
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Lyndon B. Johnson Space Center  
Houston, Texas 77058  
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For Release:

Barbara Schwartz  
RELEASE NO. 92-064

November 23, 1992

## CHANGE IN SPACE SHUTTLE PREFLIGHT BRIEFINGS SET

Beginning with the first Space Shuttle flight in 1993, the format for preflight mission briefings will change. The mission overview and crew briefings will be held approximately 2 weeks before the flight instead of a month before the mission.

In conjunction with this change, NASA will no longer conduct round-robin interviews with astronauts in this timeframe. One-on-one interviews with crew members still will be accommodated up to 60 days prior to each flight. In addition, extensive pre-taped interviews with each crew member will be provided to media upon request.

Accredited reporters are invited to submit questions for incorporation into the taped astronaut interviews. Questions for the STS-54 crew should be sent to NASA Johnson Space Center, Attn: AP3/Media Services Branch, Houston, 77058, by Nov. 25.

All briefings will be broadcast on NASA Select television, and reporters are invited to participate at the originating location or by two-way audio from other NASA locations. The next preflight briefings are scheduled for early January, and an announcement will be issued with the schedule in December.

NASA Select television is carried on Satcom F2R, transponder 13, at 72 degrees west latitude.

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# NASA News

National Aeronautics and  
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Lyndon B. Johnson Space Center  
Houston, Texas 77058  
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For Release

James Hartsfield  
Release No. 92-065

November 27, 1992

## FLIGHT CONTROL OF STS-53

Flight control for STS-53, the 15th voyage of Discovery, will follow the procedures and traditions common to U.S. manned space flights since 1965, when the Mission Control Center was first used.

Responsibility for conducting Shuttle operations will revert to the Mission Control Center (MCC) in Houston once <sup>Discovery</sup> Columbia's two solid rocket boosters ignite. Mission support in the MCC will begin five hours prior to launch and continue through landing.

The primary objectives of mission STS-53 are to DOD-1 operations and to conduct a variety of secondary investigations for the Department of Defense and others, including deploy of the Orbital Debris Radar Calibration Spheres (ODERACS).

Orbiter operations will be conducted from Flight Control Room Two (FCR-2) on the third floor of the MCC located in Bldg. 30 at the Johnson Space Center. The teams of flight controllers will alternate shifts in the control center and in nearby analysis and support facilities. The handover between each team takes about an hour and allows each flight controller to brief his or her replacement on developments during the previous two shifts.

The flight control teams for this mission will be referred to as the Ascent/Entry, Orbit 1, Orbit 2, and Planning teams. The ascent and entry phases will be conducted by flight director Wayne Hale. The Orbit 1 team will be directed by flight director Milt Heflin. The Orbit 2 team will be headed by lead flight director Rob Kelso. The Planning team will be led by Linda Ham.

###

## MCC POSITIONS AND CALL SIGNS FOR STS-53

The flight control positions in the MCC, and their responsibilities, are:

### **Flight Director (FLIGHT)**

Has overall responsibility for the conduct of the mission.

### **Spacecraft Communicator (CAPCOM)**

By tradition an astronaut; responsible for all voice contact with the flight crew.

### **Flight Activities Officer (FAO)**

Responsible for procedures and crew timelines; provides expertise on flight documentation and checklists; prepares messages and maintains all teleprinter and/or Text and Graphics System traffic to the vehicle.

### **Integrated Communications Officer (INCO)**

Responsible for all Orbiter data, voice and video communications systems; monitors the telemetry link between the vehicle and the ground; oversees the uplink command and control processes.

### **Flight Dynamics Officer (FDO)**

Responsible for monitoring vehicle performance during the powered flight phase and assessing abort modes; calculating orbital maneuvers and resulting trajectories; and monitoring vehicle flight profile and energy levels during reentry.

### **Trajectory Officer (TRAJECTORY)**

Also known as "TRAJ," this operator aids the FDO during dynamic flight phases and is responsible for maintaining the trajectory processors in the MCC and for trajectory inputs made to the Mission Operations Computer.

### **Guidance, Navigation & Control Systems Engineer (GNC)**

Responsible for all inertial navigational systems hardware such as star trackers, radar altimeters and the inertial measurement units; monitors radio navigation and digital autopilot hardware systems.

### **Guidance & Procedures Officer (GPO)**

Responsible for the onboard navigation software and for maintenance of the Orbiter's navigation state, known as the state vector. Also responsible for monitoring crew vehicle control during ascent, entry, or rendezvous.

## **Rendezvous Guidance and Procedures Officer (RENDEZVOUS)**

The RENDEZVOUS GPO is specialist who monitors onboard navigation of the Orbiter during rendezvous and proximity operations.

## **Environmental Engineer & Consumables Manager (EECOM)**

Responsible for all life support systems, cabin pressure, thermal control and supply and waste water management; manages consumables such as oxygen and hydrogen.

## **Electrical Generation and Illumination Officer (EGIL)**

Responsible for power management, fuel cell operation, vehicle lighting and the master caution and warning system.

## **Payloads Officer (PAYLOADS)**

Coordinates all payload activities; serves as principal interface with remote payload operations facilities.

## **Data Processing Systems Engineer (DPS)**

Responsible for all onboard mass memory and data processing hardware; monitors primary and backup flight software systems; manages operating routines and multi-computer configurations.

## **Propulsion Engineer (PROP)**

Manages the reaction control and orbital maneuvering thrusters during all phases of flight; monitors fuel usage and storage tank status; calculates optimal sequences for thruster firings.

## **Booster Systems Engineer (BOOSTER)**

Monitors main engine and solid rocket booster performance during ascent phase.

## **Ground Controller (GC)**

Coordinates operation of ground stations and other elements of worldwide space tracking and data network; responsible for MCC computer support and displays.

## **Maintenance, Mechanical, Arm & Crew Systems (MMACS)**

Formerly known as RMU; responsible for remote manipulator system; monitors auxilliary power units and hydraulic systems; manages payload bay and vent door operations.

## **Extravehicular Activities (EVA)**

A specialist responsible for monitoring and coordinating preparations for and execution of space walks. Responsibilities include monitoring suit and EVA hardware performance.

### **Payload Data & Retrieval System (PDRS)**

A specialist responsible for monitoring and coordinating the operation of the remote manipulator system.

### **Flight Surgeon (SURGEON)**

Monitors health of flight crew; provides procedures and guidance on all health-related matters.

### **Public Affairs Officer (PAO)**

Provides real-time explanation of mission events during all phases of flight.

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## STS-53 FLIGHT CONTROL TEAM STAFFING

<u>POSITION</u>	<u>ASCENT/ENTRY</u>	<u>ORBIT 1</u>	<u>ORBIT 2</u>	<u>PLANNING</u>
FLIGHT	Wayne Hale	Milt Heflin	Rob Kelso	Linda Ham
CAPCOM	Kevin Chilton (A) Ken Reightler (E)	Sam Gemar	Don Thomas	Carl Meade Jay Apt
PAO	Brian Welch	Brian Welch	James Hartsfield	Kyle Herring
FAO	Tracy Calhoun	Tracy Calhoun	Gail Schneider	Richard Cilento
INCO	Christopher Counts	Christopher Counts	Richard La Brode	Harry Black
FDO	Brian Hilty (A) Matt Abbott (E)	Dave Theis	Dan Adamo	Roger Balettie
TRAJ	Doug Rask (A) Kathy Fletcher (E)	Don Pearson	Mark Riggio	Mark Haynes
GPO	Dennis Bentley (A) Kelly Beck (E)	N/A	N/A	N/A
GNC	John Shannon	Brad Schoenbauer	David Gruber	Leroy Cain

EECOM	Leonard Riche	Leonard Riche	Quinn Carelock	Dan Molina
EGIL	Ray Miessler	Ray Miessler	Larry Minter	Benjamin Pawlik
PAYLOADS	Mark Childress	Mark Childress	Joe Cavallaro	Nellie Carr
DPS	Gary Sham	Gary Sham	K.C. Terry	Clyde Sherman
PROP	William Powers	William Powers	Carlyle Lowe	Tom Lazo
BOOSTER	Ken Dwyer (A) John Dingler (E)	N/A	N/A	Terri Stowe
GC	John Snyder Lynn Vernon	Bob Reynolds Mike Marsh	Ed Klein Henry Allen	Terry Quick Johnnie Brothers
MMACS	Alan Bachik	Alan Bachik	Bill Anderson	Alan Simon

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# NASA News

National Aeronautics and  
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Lyndon B. Johnson Space Center  
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For Release

James Hartsfield  
RELEASE: 92-066

November 25, 1992

## SPACEWALK ADDED TO SHUTTLE FLIGHT, MORE EXPECTED

With just over 3 years left before construction of Space Station Freedom begins in Earth orbit, NASA has decided to add spacewalks to upcoming Shuttle flights when possible, beginning with one during STS-54 in January 1993.

The spacewalks, or extravehicular activities (EVAs), will fine-tune the methods of training astronauts for assembly tasks in space and increase the spacewalk experience levels of astronauts, ground controllers and instructors.

EVAs will be added to Shuttle missions only when they can be performed with no impact on the other objectives and they will be the lowest priority activity on each mission.

For STS-54, astronauts Greg Harbaugh and Mario Runco, Jr., will perform a 5-hour spacewalk evaluating their abilities to move about Endeavour's cargo bay with and without large objects; closely align large objects; and install large equipment. In addition, the tests will provide information on the amount of time required for various tasks and for the astronauts to become acclimated to the spacewalk environment.

STS-54 is the only Shuttle flight to have a spacewalk officially added as part of the new tests. However, several other 1993 Shuttle flights as well as many in the following years are being studied as candidates for further spacewalk additions.

Although spacewalks have been conducted periodically on NASA flights since the Gemini Program in the mid-1960s, the tasks being performed outside the spacecraft have become, in general, increasingly more demanding. The challenge will continue to increase when Space Station Freedom construction begins in March 1996.

During spacewalks performed on Shuttle mission STS-49 in May to repair the INTELSAT VI satellite and test Freedom construction techniques, differences between ground training and actual orbital tasks were noted that can significantly affect the performance of a spacewalk. The effect of these differences could become more pronounced as the duration and complexity of the spacewalk work grows.

- more -

- 2 -

The spacewalk tests to be conducted during the years leading up to Space Station Freedom construction will help characterize the exact nature of these differences and assist in developing better training of astronauts for spacewalking construction work. They will characterize astronauts' abilities to move large objects in space and evaluate the amount of time required to perform various tasks. Also, they will attempt to identify the physical demands of various spacewalk jobs and evaluate new training techniques.

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# NASA News

National Aeronautics and  
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Lyndon B. Johnson Space Center  
Houston, Texas 77058  
AC 713 483-5111

11/30/92 10:10:31

For Release

November 30, 1992  
10 a.m. CST

Barbara Schwartz  
RELEASE NO. 92-067

## COHEN NAMES LEESTMA TO TOP FLIGHT CREW OPERATIONS POSITION

Johnson Space Center director Aaron Cohen has named astronaut David C. Leestma director of Flight Crew Operations (FCOD), effective immediately.

"This job requires a multi-dimensional person who can manage astronaut and payload specialist activities, aviation operations, and safely make expert technical decisions regarding human spaceflight, resolving issues with vehicle systems, payloads, experiments, crew equipment, and flight rules, while bringing to fruition program goals. I chose Dave from a group of exemplary candidates--and it was major competition--because he has demonstrated his ability to do this job and do it well," said Cohen.

Leestma, 43, a Navy captain, is currently deputy chief and acting chief of the Astronaut Office. He was deputy director of FCOD from February 1990 until September 1991, when he left that position to train for his third Space Shuttle mission. Leestma flew as a mission specialist on STS 41-G in October 1984, performing a space walk with Kathryn Sullivan, Ph.D., to demonstrate the feasibility of refueling satellites in space. He also was a mission specialist on STS-28, a classified Department of Defense mission, in August 1989, and STS-45, the Atmospheric Laboratory for Applications and Science spacelab mission, in March 1992.

Between the three space flights, Leestma had other technical and management assignments. He was chief of the Mission Development Branch in the Astronaut Office, responsible for assessing the design, preparation, modifications, safety and certification requirements of payloads to be flown on the Shuttle. He worked in the Mission Control Center as capsule communicator (CAPCOM) from January to November 1985.

Leestma was a Naval flight officer and operational test director before his selection as an astronaut in 1980. He has logged over 3,500 hours of flight time and is a life member of the Association of Naval Aviation. He graduated first in his class from the U.S. Naval Academy and went on to earn a master of science degree in aeronautical engineering from the U.S. Naval Postgraduate School.

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-2-

"Dave's varied experience and record of achievements speak for themselves. He has the necessary leadership skills, hands-on technical expertise, and practical experience for this key position. I am confident that he will work well with Agency officials, international partners, the science community, and aerospace industry officials to accomplish the ambitious human spaceflight goals," said Cohen.

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# NASA NEWS

National Aeronautics and  
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Lyndon B. Johnson Space Center  
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For Release

Billie Deason/Kyle Herring  
RELEASE: 92-068

November 30, 1992

## SOYUZ AS SPACE STATION EMERGENCY VEHICLE IS FOCUS OF MEETING

A group of NASA and Russian officials began 2 weeks of working group meetings today at the Johnson Space Center (JSC), Houston, to discuss the feasibility of using the Soyuz TM capsule as a means of returning Space Station Freedom crews to Earth in an emergency when the Space Shuttle is not docked at the orbiting laboratory.

NASA and NPO-Energia, a Russian company, will meet for the next 2 weeks for a final review on the feasibility of using the Soyuz TM spacecraft as an Assured Crew Return Vehicle (ACRV) for astronauts aboard the space station. Various concepts are being considered for the ACRV, one of which is the Soyuz spacecraft.

"Many configurations have been analyzed to support the space station, and the Soyuz TM with its three-person capability may provide an interim solution to allow an early permanently-manned capability for Freedom," said Jerry Craig, ACRV Project Manager.

This meeting continues efforts between NASA and NPO-Energia that began earlier this year when the two entered into a study contract.

A number of the Russian participants in the working group sessions were previously involved with the highly successful Apollo-Soyuz Test Project conducted between the U.S. and USSR during the 1970-1975 time period. This will be their first visit to JSC since that time.

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EDITOR'S NOTE: Meeting attendance is limited to official members of the working groups. News media may request interviews through the Public Affairs Office newsroom by calling 713/483-5111.

# NASA NEWS

National Aeronautics and  
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Lyndon B. Johnson Space Center  
Houston, Texas 77058  
AC 713 483-5111

For Release  
December 4, 1992

Kyle Herring  
RELEASE NO. 92-069

## NOTE TO EDITORS: Garn Simulator and Training Facility Dedication

A ceremony is planned at 12:30 p.m. CST, December 10, 1992, to dedicate the "Jake Garn Mission Simulator and Training Facility" - a multi-mission training complex at the Johnson Space Center housing the Space Shuttle mission simulators as well as the Space Station Training Facility.

The new facility is located in building 5, formerly home to the Skylab trainer. The building has been modified and enlarged to house new simulators that will be used to train astronauts for missions aboard the international Space Station *Freedom* in addition to the Space Shuttle mission simulators currently used for high-fidelity training of crews for Shuttle flights.

United States Senator Jake Garn of Utah, for whom the facility is being named, flew as a payload specialist aboard Discovery on the 16th Space Shuttle mission, STS 51-D. He is leaving the Senate after 18 years.

The event will be hosted by JSC Center Director Aaron Cohen and will include remarks by NASA Administrator Daniel Goldin, Senator Barbara Mikulski of Maryland, JSC Director of Mission Operations Eugene Kranz, Shuttle flight STS 51-D commander Karol Bobko, as well as Senator Garn. The ceremony will be broadcast live on NASA Select television, carried on Satcom F2R, transponder 13.

Accredited news media are invited to attend the dedication ceremony which will take place inside building 5. Tours of the facility are planned following the ceremony.

News media planning to attend should contact Kyle Herring or Jeff Carr at the JSC news room by Wednesday, December 9, 1992, at 713/483-5111.

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# NASA News

National Aeronautics and  
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Lyndon B. Johnson Space Center  
Houston, Texas 77058  
AC 713 483-5111

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For Release

Billie Deason  
Kyle Herring

December 9, 1992

RELEASE NO. 92-070

NOTE TO EDITORS:

## OFFICIALS AVAILABLE TO DISCUSS ACRV STUDY PROGRESS

NASA and NPO-Energia officials will be available at 1 p.m, Fri., Dec. 11, to discuss findings from a study of the feasibility of using the Soyuz TM capsule as a means of returning Space Station Freedom crews to Earth in an emergency when the Space Shuttle is not docked at the orbiting laboratory.

Arnold Aldrich, NASA's Associate Administrator for Space Systems Development, and Yuri Semenov, General Director and General Designer of NPO-Energia, will be available to answer questions about the progress of the study begun last June between NASA and NPO-Energia.

Representatives of NASA and NPO-Energia, a Russian company, are completing this week a final review on the feasibility of using the Soyuz TM spacecraft as an interim Assured Crew Return Vehicle (ACRV) for astronauts aboard the space station.

Aldrich and Semenov will be available in the public affairs briefing room, Bldg. 2, room 135, at the Johnson Space Center.

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# NASA News

National Aeronautics and  
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Houston, Texas 77058  
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For Release:

Barbara Schwartz  
RELEASE NO. 92-071

December 30, 1992

## STS-53 AND STS-54 SPACE SHUTTLE MISSION BRIEFINGS SET

The STS-53 postflight crew briefing and STS-54 preflight briefings will be held Jan. 6 and 7 at the Johnson Space Center, Houston, building 2, room 135. The TDRS briefing will originate from the Kennedy Space Center and the IUS briefing will originate from the Marshall Space Flight Center. Reporters may cover the briefings at NASA Headquarters or other NASA centers.

A briefing agenda is attached. All briefings will be carried on NASA Select television with two-way audio for questions from participating NASA locations. NASA Select programming is carried on SATCOM F2R, transponder 13, located at 72 degrees west longitude.

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AGENDA  
STS-54 PREFLIGHT BRIEFINGS  
STS-53 POSTFLIGHT BRIEFING  
January 6-7, 1993

U.S. Gov't

Time	Briefing	Moderator
Wednesday, Jan. 6		
8: 30 a.m.	Mission Overview Phil Engelauf, Lead Flight Director	James Hartsfield
9:30	Physics of Toys Greg Vogt, NASA Hqs. Education Specialist	Barbara Schwartz
10:05	Tracking and Data Relay Satellite-F Charles Vanek TDRS Program Manager	George Diller (Originating from KSC)
10:50	Inertial Upper Stage Sid Soucier Manager, Space Systems Program Office	Jerry Berg (Originating from MSFC)
11:25	Diffuse X-ray Spectrometer Dr. Louis Kaluziński HQ, Program Scientist Dr. Wilton T. Sanders, Principal Investigator University of Wisconsin-Madison Steven C. "Chris" Dunker DXS Mission Manager	James Hartsfield
noon	Lunch	
1:00 p.m.	Improved Waste Collection System Daniel M. Germany Manager, Orbiter and GFE Projects Office	James Hartsfield
1:35	EVA Briefing Ron Farris, EVA Section Chief Gerry Miller, EVA Flight Controller	James Hartsfield

3:00 STS-53 Postflight Crew Briefing Barbara Schwartz  
Dave Walker  
Bob Cabana  
Guy Bluford  
Jim Voss  
Rich Clifford

Thursday, Jan. 7

9:00 a.m. STS-54 Crew Briefing Barbara Schwartz  
John Casper, Commander  
Donald McMonagle, Pilot  
Gregory Harbaugh, Mission Specialist  
Susan Helms, Mission Specialist  
Mario Runco, Jr., Mission Specialist